

PN-ABZ 404

92031

**Implementing IIFC and NIIB
Management Information Systems
for Regulation and Supervision**

Price Waterhouse
New Delhi

April 1994

Prepared for
Indo-US Housing Finance Expansion Program

Abt Associates Inc.
Management Support Services Contractor
B2/13 (2nd Floor)
Vasant Vihar
New Delhi 110 057

USAID Project No. 386-0526-00-C-2295-00

8

CONTENTS

EXECUTIVE SUMMARY

1. INTRODUCTION

1.1	Background	1
1.2	Objectives of the Workshop	1
1.3	Scope of Work	2
1.4	Contents of the report	2

2. APPROACH TO THE WORKSHOP

2.1	Overall Approach	3
2.2	Day 1	3
2.3	Day 2 and 3	4

3. HFC INFORMATION SYSTEMS FOR REGULATION AND SUPERVISION

3.1	HFC readiness to implement MIS for self regulation and supervision	5
3.2	Summary of implementation approaches adopted	12

4. NHB INFORMATION SYSTEMS FOR REGULATION AND SUPERVISION

4.1	NHB's readiness to implement an MIS for regulation and supervision	17
4.2	NHB's implementation plan	18

5. TECHNICAL ASSISTANCE NEEDS OF NHB & HFCs

5.1	HFC Training	21
5.2	Loan Prepayment Data	21
5.3	NHB Reporting Formats	22
5.4	Ongoing Industry Dialogue	22
5.5	NHB Internal Training	22

APPENDIX A

List of participants

APPENDIX B

Workshop Agenda

APPENDIX C

Technology options for implementation of the MIS

EXECUTIVE SUMMARY

INTRODUCTION

One of the key efforts of the Indo-US Housing Finance Expansion Program is to provide support to housing finance companies and NHB in enhancing their capability to manage financial risk. In this connection several initiatives have been undertaken, the latest of which was a workshop on implementing information systems in Housing Finance Companies (HFCs) and National Housing Bank (NHB) for monitoring and managing risk in the sector, conducted by Price Waterhouse. This report presents an overview of the workshop proceedings, summarises the approaches being adopted by the industry in implementing information systems for monitoring financial risks, provides the consultants' assessment of the overall readiness of the industry in this regard and identifies further needs for technical assistance.

OVERVIEW OF THE WORKSHOP

The workshop was held during February 14-16, 1994 at Calcutta and was attended by 36 personnel representing 15 HFCs and NHB. Of these, 8 were Chief Executive Officers of HFCs. The first day included presentations on risk dimensions, broad identification of information needs for monitoring risk on each dimension and management issues in adopting different approaches to implementing a MIS focusing on risk monitoring and management. Following this, personnel from each of the participating HFCs spent some time discussing the way forward and deciding on a specific approach to the implementation. The next two days, in which the CEOs did not participate, were spent in developing an in-depth understanding of the risk measures, their computation, analysis and interpretation, and in developing action plans for implementation based on the choices made on the first day. The participants returned with implementation plans which could form the basis for a more detailed and coordinated exercise in the respective home offices.

HFC READINESS TO IMPLEMENT MIS/ REPORT TO NHB

In general, the industry demonstrated its willingness to commence/continue to monitor performance along the identified risk dimensions and to report on these to NHB, but is yet to develop a strategic perspective on financial risk management. For most HFCs, appreciation of financial risk is still largely limited

to credit risk. However, at-least two of the participating HFCs envision risk management as key to future success and have started gearing up to not only measure and monitor risk on an ongoing basis but also to incorporate this information into their Executive Information Systems to ensure that the strategic direction and decision making of the HFC takes various risk dimensions into account in an explicit and systematic manner.

For the majority of the participating HFCs, appreciation of risk dimensions and implications for their performance is seen to be somewhat limited possibly because of a limited perspective on the changes sweeping all sectors of the economy (and specially the financial services sector) but also perhaps because in many of these HFCs, there is a lack of continuity in the top echelons of management, as personnel from the parent bank are posted to the HFC on a 2-3 year term basis, often with a simultaneous continuing charge of some aspects of the parent bank's operations.

All the participating HFCs are already generating 50% or more of the measures suggested by James Croft for HFC reporting to NHB to enable the latter to implement a supervisory MIS¹. This percentage can be taken upto 90% in most cases within the next six months or so, although the companies will need a longer time to develop systems that can provide information in adequate detail and with analysis that will be useful to management in monitoring risk and to aid in decision making. The balance 10% of the measures include interest rate risk measures like gap analysis which need to be understood better and credit risk measures like loan past due which need to be redefined before systems can be put in place for measuring and reporting to them. Specifically, in the case of gap analysis, domestic and foreign benchmark studies are required to enable projection of prepayment behaviour under different scenarios of interest rate movements.

It may be mentioned here that all the HFCs with any significant size of operations have already embarked on plans that envisage eventual computerization of all transaction processing including loan appraisal and sanction as well as maintenance of corresponding borrower details. More than half of the participating HFCs have made considerable headway in this direction while the balance unfolded plans that are envisaged for completion by the end of 1995. As such, for most HFCs, implementing risk management systems will essentially involve development of an additional information module that draws on data already captured by the base systems but as mentioned earlier, a strategic appreciation of risk dimensions among the top and mid Managerial levels is a prerequisite to establishment of anything other than a basic reporting

¹

Croft James, Analysis of NHB regulatory and supervisory activities and Associated MIS monitoring requirements, November 1993.

and monitoring system.

NHB READINESS TO IMPLEMENT SUPERVISORY MIS

The participating NHB personnel demonstrated a high degree of keenness in getting on with establishment of the supervisory MIS and drew up a specific action plan for putting the required structure, systems and policies in place. This plan was to be carried back to their board for approval before commencement of any activities. Broadly, NHB aims to send out formats for HFC reporting in June 1994 and have the structure, people, computer hardware and software in place to receive and act upon the first quarter returns from the HFCs.

As per the action plan prepared by NHB, significant external inputs will be sought to achieve implementation in the above time frame. It may be mentioned here that the plan to be put up before the NHB board includes certain strategic issues which require resolution. These include the basis for selecting HFCs to be supervised, organizational structure of the Supervisory department, delegation of authority etc. At the same time NHB needs to continue its efforts to proactively seek enhanced legislative authority for the envisaged regulation and supervision function.

TECHNICAL ASSISTANCE NEEDS OF NHB & HFCs

In PW's assessment, the following technical assistance could aid in accelerating the pace at which the industry implements management information systems for regulation and supervision:

- Assistance to NHB in training supervisory personnel in analysing and interpreting information received from HFCs and in various aspects of the supervision and regulation function, in developing HFC reporting formats, in developing job and position descriptions and reporting relationships for the supervision function.
- Assistance to NHB in building consensus among the regulatory bodies on its role in regulation and supervision of HFCs and in obtaining statutory authority for effective discharge of this role.
- Industry workshops focusing on some specific risk dimensions, such as interest rate risk, to further prepare the industry to face the deregulated economic environment. Extension of general training in risks associated with the housing finance business in the future deregulated environment to the middle management in the approved Companies as also to senior and middle management in other classified HFCs.

- Assistance to the larger HFCs in developing predictive models for prepayment behaviour and dissemination of this information among other HFCs.
- Assistance in developing an ongoing dialogue among HFCs and between HFCs and NHB/other regulatory bodies on issues such as norms for risk measures.
- Building industry capacity to foresee environmental changes impacting their risk profile and exposing the senior/middle management to alternatives available to manage risk.

8

INTRODUCTION

1.1 BACKGROUND

The National Housing Bank (NHB) is the apex institution for the housing finance sector. NHB has been mandated to promote the development of the housing finance sector on sound lines as per the NHB Act, 1987.

Abt Associates Inc. (Abt) through the USAID/ Housing Finance Sector Expansion Program is assisting NHB in developing a system to effectively and efficiently supervise and regulate the Housing Finance Companies (HFCs).

As a part of this effort, Abt commissioned James Croft, a US consultant, to define the risks that HFCs are exposed to and to identify measures that NHB may monitor in order to effectively regulate and supervise the management of risk by the HFCs.

James Croft presented his findings and recommendations in two reports entitled, "Option for Licensing, Regulation, Supervision and Closure of Housing Finance Companies in India - August 1990" and " Analysis of NHB regulatory and supervisory activities and Associated MIS requirement - November 1993".

These studies were followed by a study by Price Waterhouse & Co titled " NHB: MIS Plan : Regulatory and Supervisory Role".

In connection with the above studies, Price Waterhouse & Co. (PW) were commissioned, to conduct a workshop for NHB and HFC personnel on Implementation of Information Systems for Regulation and Supervision.

1.2 OBJECTIVES OF THE WORKSHOP

The objectives of the workshop were two fold.

1. For the HFCs and NHB to understand and agree on the risk measures to be monitored.
2. For the HFCs and NHB to outline individual implementation plans to monitor and report on the risks.

1.3 SCOPE OF WORK

The Scope of Work for the workshop and the subsequent report is detailed below.

- To conduct a workshop which would assist housing finance companies in establishing information systems for managing their risks and also to assist NHB in establishing an information system to facilitate its regulation and supervision of the housing finance industry.

The workshop focused on the following topics :

- definitions of the key financial risks to be monitored by the HFCs.
 - explanations of the basic measurements, including flags and triggers.
 - generation and analysis of the measures.
 - assisting the HFCs in defining plans for implementing an MIS for risk monitoring.
- To prepare a report summarising the workshop and the HFC & NHB implementation plans. The report also summarises PW's understanding of the readiness of the industry to start monitoring these risks.

1.4 CONTENTS OF THE REPORT

This report is presented in 5 chapters.

This introductory chapter outlines the background of the workshop, its objective and the Scope of Work.

Chapter 2 presents PW's approach to the workshop.

Chapter 3 discusses HFC readiness to implement a MIS for risk management, the possible different approaches to implementation and a summary of the approaches adopted by the HFCs at the workshop.

Chapter 4 presents a snapshot of NHB's readiness to implement the MIS for regulation and supervision and its approach to implementation.

Chapter 5 outlines suggested next steps for the establishment of effective regulation and supervision systems for HFCs.

APPROACH TO THE WORKSHOP

2.1 OVERALL APPROACH

To achieve the above objective, the workshop was conducted in two parts. The first part ensured that the CEOs of the HFCs are clear about the risk dimensions and the information required to monitor them. Based on this understanding, the CEOs left behind a mandate for their operational staff, regarding the implementation approach for the MIS for risk monitoring.

The second part of the exercise was carried out by the operations/ MIS personnel who would outline a plan for implementing the MIS based on the broad approach selected by the CEO.

The workshop was a highly interactive one with the HFCs playing an active role through group activities, presentations and exercises.

Please see Appendix A for list of participants and Appendix B for detailed agenda of the workshop.

2.2 DAY 1

The 1st day of the workshop basically covered two topics.

The first was the various risk dimensions that any financial company would face and the risks that Housing Finance Companies in particular, face.

The second were the technology options that were available to the HFC to implement an MIS for monitoring the identified risks. The technology options ranged from low technology manual systems to high technology RDBMS based multi user systems.

In addition to the above topics there was a presentation by CRISIL on how a rating agency looks at risk.

Some of the HFCs who have some systems in place, were invited to talk about issues they faced in using and implementing these systems.

2.3 DAY 2 AND 3

Day 2 and 3 focused on details of the measures including their definitions, analysis and interpretation. Details of the technology options and the points that need to be considered while preparing an implementation plan were also discussed.

The HFCs were then divided into groups based on their current state of computerisation and level of monitoring of the risks. Group wise, general, implementation plans were then prepared based on assumptions regarding evolution of their systems. Based on the group plans and the subsequent discussions, each of the HFCs then prepared individual implementation plans. These plans could form the basis for a more detailed and coordinated exercise in the respective home offices.

HFC INFORMATION SYSTEMS FOR REGULATION AND SUPERVISION

This chapter has the following sections:

- A commentary on the readiness of the HFCs for implementing an Information System for self regulation and supervision.
- Summary of implementation approaches to be followed by HFCs.

3.1 HFC READINESS TO IMPLEMENT MIS FOR SELF REGULATION AND SUPERVISION

Successful implementation of MIS for Regulation and Supervision is largely dependent on the current scenario prevalent in HFCs. To evaluate the current scenario the following framework has been used. (Please see Exhibit 1.)

3.11 Self Regulation and Supervision has the following three aspects.

Policy/ Strategy Level Decision Making

The most critical aspect of risk management is the policy/ strategy decision making at the top management level of the HFC. The inputs for this decision making process stem from both external and internal sources.

- External inputs include those regarding the regulations, government policies, behaviour of the market/consumer, competition and any other related issues which have an impact on the risks to which the business is exposed.
- Internal inputs include information from within the organisation which indicates the position of the organisation vis a vis the expected performance on various parameters.

Information from these two sources may lead to various changes including any of the following:

- Changes in operational systems to better handle the emerging situation
- Changes in operating norms
- Strategic/policy decisions regarding markets, customers, products
- Changes in organisational structure for better risk management.

Control/ Monitoring of Risk Through Measures and Norms

Based on the directions set by the top management, measures and norms for the risk factors may need to be set/reset.

Regular monitoring of measures and analysing these measures vis a vis norms, and studying trends and movements helps in fine tuning the operations of the HFCs. The analysis also throws up issues which need to be addressed at the top management level for strategic direction setting.

Operational Systems for Data Capture and Reporting

Systems at the operational level are required which will capture data and report on the measures identified for the risk factors. The systems, which could be manual or computer based, interact with the base transaction handling that takes place in the organisation. These systems should be in a position to report on measures, provide analysis of trends over time and in case of exceptions provide the transaction data for more detailed analysis. These systems are guided by directions from the strategic decision making process.

3.12 Observations

Most of the HFCs who attended the workshop are in their infancy and have been operating in a highly regulated and protected environment. As a result, some of the risks which are likely to come up with deregulation, such as higher competition, lesser subsidized credit etc. have not been faced by the HFCs. In the scenario, it is only natural that the HFCs appreciation of financial risk is largely limited to credit risk. However, a few of the larger HFCs envision risk management as key to future success. They have started measuring and monitoring risk on an ongoing basis and are also utilising the information for strategic direction and decision making.

Measures for Monitoring Risks

See Exhibit 2 for list of measures and their definitions.

The primary requirement for risk monitoring is a clear understanding of the measures and having information systems in place for the purpose of reporting.

From that point of view, the 14 measures as identified in the PW report on MIS for Regulation and Supervision¹ can be classified into 3 categories :

- Measures which are clearly understood and reasonably well defined. Information for monitoring them are also available or can be made easily available. The measures in this category are Loan to cost, High risk loans, % EMI overdue to the amount due during the period and ageing analysis of past due, Income to Instalment and Liquidity measures.
- Measures for which HFCs have basic information for monitoring but to really understand their impact further dimensions of analysis and inferencing need to be determined. Measures in this category are Interest Coverage Ratio, Shift in Business, Leverage of NOF, Asset Growth and variance analysis.
- Measures which need to be more clearly understood before monitoring and inferencing can be commenced. Measures in this category are Interest rate risk gap analysis, Portfolio spread, loans past due.

Barring one or two HFCs, all HFCs are monitoring/ reporting the risk measures in the first category through manual or computerised system.

Risk measures in the second category are monitored by less than half of the HFCs . Practically, none of the HFCs have been able to clearly define and monitor the third category measures.

¹ Pricewaterhouse, NHB : MIS Plan : Regulatory and Supervisory Report, November 1993.

Operational Systems

Two to three HFCs which, as mentioned earlier, are in their infancy and have not yet established any manual/computerised MIS. The balance HFCs have made a good deal of progress in implementing computerised systems for base transaction processing. It is possible to categorise HFCs based on the progress made in this area.

- No computerised transaction processing systems
- PC based transaction processing systems being implemented
- PC based transaction processing systems as well as some MIS for risk monitoring has been implemented
- DBMS based transaction processing system as well as some MIS for risk monitoring has been implemented

Although as evident, few HFCs are looking at strategy level risk management, most of them are monitoring/ reporting on 50 or more of the measures and can soon start reporting on the balance measures also. Regular monitoring will help to focus the attention of the top management on these issues and their urgency will soon become apparent to them leading to effective and proactive risk management.

Exhibit 2. Measures and suggested Definitions

1. **Loan to Cost Ratio**
Average loan to cost of property ratio for loans sanctioned this quarter each of the following sub categories:
 - individuals
 - corporate bodies
 - builders

2. **Percentage of Higher Risk Loans**
Percentage of total loans sanctioned this quarter for land development and land acquisition.

3. **Loan Collection I**
Percentage of loans overdue by
 - more than 180 days
 - between 90 - 180 days

4. **Loan Collection II**
Percentage collection of EMIs during the quarter.

5. **Shift in business**
Changes, in loans sanctioned during the quarter as compared to the previous quarter, by geographical area, loan type, borrower type and size of loans.

6. **Income to Instalment Ratio**
Average income of borrower to monthly instalment for individuals.

7. **One and Three year cumulative gap**
One and three year cumulative gap between asset and liability maturity based on interest sensitivity.

8. **Debt Service Coverage Ratio**
Ratio of total inflow to total outflow.
Total inflow = deposit receipts + principal repayment + interest received
Total outflow = deposit and loan repayment + interest payments

Exhibit 1

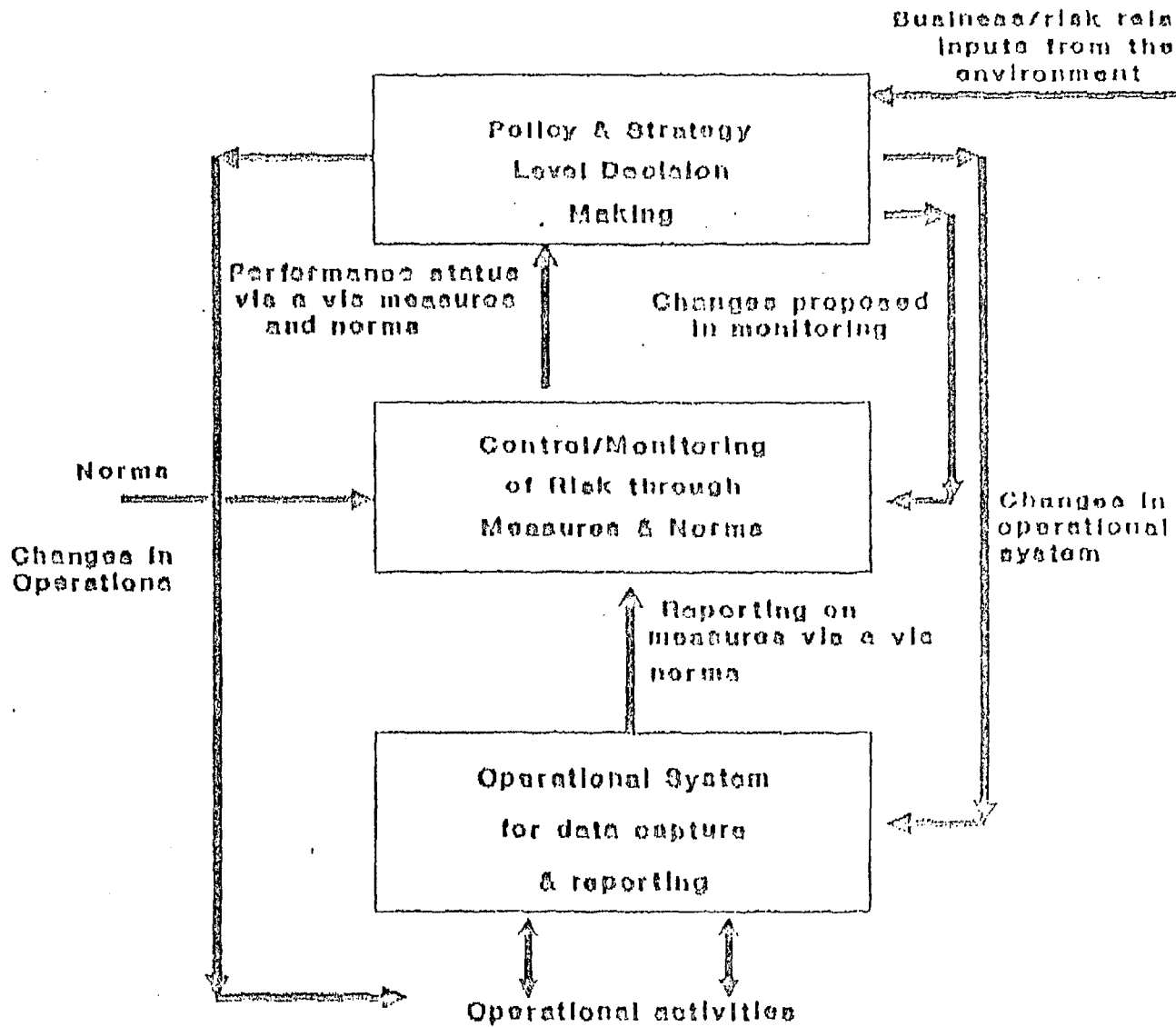


Exhibit 2. (Contd)

9. Interest Coverage Ratio

Ratio of all interest earnings to all interest payments (Interest includes returns from all interest earning assets and interest bearing liabilities).

10. Interest Spread

Difference between weighted average interest rate paid and weighted average interest rate earned (Interest includes returns from all interest earning assets and interest bearing liabilities).

11. Asset Growth

Percentage change in level of assets between quarters.

12. Variance Analysis

Comparison between forecast, of deposits mobilisation and loans sanctions, and actuals.

13. Leverage of Net Owned Funds

Ratio of net owned funds to all liabilities (including inter corporate deposits).

Net Owned Funds = A - B

A = Paid up Capital + reserves and surplus

B = Accumulated balance of loss + Balance of deferred revenue expenditure and other intangible assets.

3.2 SUMMARY OF IMPLEMENTATION APPROACHES ADOPTED

3.21 Overview

The HFCs participating in the workshop outlined the implementation approaches they wished to adopt using the framework of possible approaches (ref. Appendix C) that were presented to them. To select the most suitable approach they looked into their information requirements, expected transaction volumes and their current status of computerisation of transaction processing systems and reporting on risk measures.

The plans prepared by the HFCs have been classified into four categories based on the similarity of approach.

Category 1

Very small and new HFCs, which are barely 2 - 3 years old and have very low projected volumes of transactions. These HFCs have practically no history of computerisation. (2 HFCs)

Category 2

Small to medium sized HFCs which have PC environments and are in the process of implementing their base transaction processing system. (4 HFCs)

Category 3

Medium sized HFCs, working on a PC environment with most of their base systems already implemented. These HFCs are already monitoring many of the risk measures using information available from the base system. (4 - 5 HFCs)

Category 4

Medium to large HFCs working in a PC environment or using more sophisticated computer systems. The base systems are in place and most of the risks are already monitored. (4 HFCs)

3.22 Summary of Implementation Approach Adopted by Category 1 HFCs.

Approach to Defining risk, Norms and Information Requirements.

Risk management as defined in the Croft report, has not yet been implemented in these HFCs. They therefore felt that it was imperative that the necessity of monitoring these risks be understood by the top management.

In order to achieve the above objective they feel the need to constitute a steering committee of top management impressing upon them the need for risk measures their definitions and norms.

The details of the risks, measures and norms would be finalised with the operational people. The information requirements of NHB would also play an important role in finalizing these details.

Data Flow

As most of the branches would be small with very few personnel there would be centralised accounting at the head office with the branch offices supplying the information. It is assumed that this information flow will be on paper.

Hardware and Software

These HFCs would be using PC based systems with the appropriate software. Till the computerised system is in place the processing would be done manually. Software development will be out sourced.

IS Organisation and Staffing

Separate MIS and EDP departments are to be established, in time. However it is imagined that these departments would not be staffed by more than 1 or 2 people as this size of the HFC does not warrant more personnel.

Training

Training to create awareness for the need for risk management and training for the MIS and EDP staff are the requirements for this category of HFCs.

Time Frame

This category of HFCs would like to stabilise "Loan Accounting Module" and "Deposit Accounting Module" by the end of 1994 and stabilise the other modules by the end of 1995. It can be assumed that the risk monitoring system would be stabilised after the base applications are in place. In the short term, however the risk monitoring MIS will be prepared manually and it can be expected that in 6 months NHB reporting on 90% of the measures will be feasible.

3.23 Summary of Implementation Plan for Category 2 HFCs.

Approach to Defining Risk, Norms and Information Requirements

While these HFCs are implementing some base applications, they are yet to start monitoring risk measures. They have therefore identified the basic task ahead as defining the measures and the norms.

Data Flow

Information will be provided by the branches to the Head Office where the processing will be carried out. As the branches are to have, or already have computers the data would be transmitted using modems or in floppies.

Hardware and Software

PC based LAN for Corporate Office and larger branches with appropriate software. Batch processing will be used for transactions. Since computer personnel are already present in the organisation, inhouse development by enhancing the base system available has been envisaged.

IS Organisation and staffing

A Separate EDP department headed by a Manager is envisaged. The size of the department would depend on the volume of transactions.

Training

Periodic training programs are envisaged to train inhouse personnel including the operational people.

Time Frame

This category of HFCs have given themselves 6 months to implement the complete system. PW, however feel that though it may be possible for monitoring and NHB reporting to take place on most measures would probably require 1 to 1 1/2 years to implement a full fledged MIS for all the measures.

3.24 Summary of Implementation Plan of Category 3 HFCs.

Approach to Defining Risk, Norms and Information Requirements

HFCs in this category would like to start with in house discussions, to clarify the measures that need to be monitored. This would be essential as even though some monitoring of risk measures exists, clarity on all risk measures does not exist.

Data Flow

Data will be collected from the branches and processed by the MIS department. Currently the information is received manually. However, as branches would have computers, the data may now be sent via modem or magnetic media.

Hardware and Software

The HFCs have, or plan to have, PC based LAN systems at the corporate office and stand alone PCs at the branches. Software development would be outsourced.

IS Organisation and Staffing

A separate EDP department is planned, headed by a manager and assisted by programmers and operators.

Training

Staff of the MIS department and of the branches will need intensive training in risk management.

Time Frame

Since some of the measures are already being monitored, it is felt that in a time frame of six months, the others can also be included in the MIS. PW however feel that although monitoring and reporting to NHB on most measures may happen in this time frame, the understanding of the balance measures and their information capture mechanisms are not very well defined, and could lead to longer time frames for implementation.

3.25 Summary of Implementation Plan of Category 4 HFCs.

Approach to Defining Risk, Norms and Information Requirements.

As these HFCs are already monitoring some risks and have the data for monitoring all risks at hand, the only step that needs to be taken is the clarification of the risks not yet monitored.

Data Flow

Data will be collected at the branches and analysis will be done at the central office. Some selected analysis will be carried out at the branches.

Hardware and Software

These HFCs have opted for open systems with DBMS. On line processing is planned in those HFCs that currently do batch processing.

IS Organisation and Staffing

IS department either exists or is planned.

Training

Branch staff will be briefed on how to generate analysis reports by the central office.

Time Frame

Category 4 HFCs plan to have their systems in place by April 1995. It is worth mentioning at this point that there is a varying degree of commitment amongst the HFCs in this category which may have an impact on their implementation time frames.

NHB INFORMATION SYSTEMS FOR REGULATION AND SUPERVISION

4.1 NHB'S READINESS TO IMPLEMENT AN MIS FOR REGULATION & SUPERVISION

In its earlier report " NHB: MIS Plan: Regulatory and Supervisory Role ", PW had recommended the system to be followed by NHB for Regulation and Supervision. This included recommendations regarding

- risks to be monitored
- the reporting system
- the inspection mechanism
- broad role, organisation & functioning of the regulation and supervision function
- computerisation priorities and strategies for implementation of the regulatory and supervisory MIS.

Based on these recommendations, NHB has started work on some of these areas.

1. Decisions have been taken on the broad structure & role of the regulation and supervision function. Efforts are being made to put in place the required personnel in this function.
2. Finalization of HFC reporting requirements is in progress, and these along with the formats and analysis requirements are expected to be ready by May 1994.
3. Decisions on implementation approach for computerised MIS have been taken. Approvals for purchase and installation of hardware and development of software are being sought. If NHB aggressively pursues this activity.

In order to be able to regulate and supervise the HFCs, it is essential that NHB has in place the appropriate structure and staff to carry out its activities effectively.

NHB has decided that the department of supervision would be headed by a Chief of Supervision with 1 policy person, 5 Supervisory Agents and 9 inspectors working with him/ her. Data capture and validation will be the responsibility of the entire Department of Supervision. Data entry however would be primarily carried out by the departmental staff inspection.

It is essential that the Chief of Supervision be appointed at the earliest. Selection of supervisory staff, detailing of job profiles and preparation of HFC reporting formats etc. should ideally be done with the Chief of Supervision in place and involved in the above process.

4.2 NHB'S IMPLEMENTATION PLAN

The participating NHB personnel displayed a great deal of keenness in getting on with the tasks involved in establishing a Supervisory MIS. The plan which was prepared by them is given below:

4.21 Approach to Defining Risk, Norms and Information Requirements

The tasks and sub tasks as defined by NHB to define risk, norms and information requirements are listed below.

- The constitution of an Advisory Committee whose structure is yet to be finalised.
- Defining the role of the personnel in the Supervisory department and also defining the mechanism of supervision.
- Detailed first list of measurements, their definitions and the norms (Flags and Triggers) to be prepared.
- Deciding on periodicity of review of norms.
- Deciding on the analysis requirements and formats for HFC reporting.

4.22 Hardware and Software

NHB has defined for itself two alternative hardware routes.

Alternative 1 involves RISC based hardware while Alternative 2 uses Pentium based Multiple Processor hardware. Both alternatives would use UNIX SVR 4.2. The databases identified are ORACLE 7.2, INGRES, SYBASE or INFORMIX. In both alternatives the user environment will be MS Windows. There will be on line processing and direct user interaction.

NHB has also defined the steps it needs to take for the development of the regulatory and supervisory MIS. They are:

- Training of software people on software development projects.
- Study for defining information requirements.
- Briefing of vendors/ calling of quotations.
- System design document, testing manuals and procedures and user manuals.
- Development, testing and implementation of the system.

It has been decided to seek outside help to carry out the above steps.

Project implementation will be the responsibility of the existing IS department.

4.23 Training

Training on four different fronts has been identified as essential by NHB. These are

- training on concepts of regulation and supervision
- training on supervisory system
- training on use of computers and
- training on software development project management.

4.24 Time Frame

The task list and time frame as defined by NHB are presented below.

TASK	TIME FRAME
Proposal to the Board for implementation of Supervisory and Regulatory MIS.	By end of March 1994.
Constitution of Advisory Committee	By end of April 1994
Constitution of Regulatory Board	By end of April 1994
Constitution of Department of Supervision	By end of April 1994
Selection of Chief of Supervision	March/ April 1994
Defining of reporting formats	1st week of May
Detailed first list of measurements, definitions and norms	April 1994
Decision on periodicity of revision of norms	April 1994
Purchase of hardware and software platforms and beginning of software development	Begin in May
Training	April/May 1994

TECHNICAL ASSISTANCE NEEDS OF NHB & HFCs

5.1 HFC TRAINING

The workshops conducted in the area of Risk Management have contributed significantly towards increasing awareness and appreciation of risk management issues at the level of the HFC senior management. However, as yet, the concentration has been primarily towards monitoring and reporting of the risk measures. HFC senior and middle management need to start countering these at the level of strategies relating to products, markets, balance sheet restructuring.

Since the HFCs have thus far been operating under a regulated environment with subsidised credit, they have not yet had to face an adverse scenario requiring such strategic reactions. One of the preemptive approaches that could be used in this connection is discussion of case studies of similar situations in other countries. This may be carried out at any forum which brings together the top management of these HFCs.

It is also recommended that the general training in risks associated with the housing finance business in the future deregulated environment be extended to the middle management in the approved companies as also to the senior and middle management in other classified HFCs.

The industry may also require assistance to build their capacity to foresee changes in the environment and the impact of these changes on their risk profile. Alongside this, the middle and senior management also need to understand alternatives available to manage such changing risk patterns.

5.2 LOAN PREPAYMENT DATA

Some of the larger HFCs may require assistance in developing models for prepayment behaviour of borrowers under various scenarios such as dropping interest rates or property prices. This information may then be disseminated to the other HFCs in the industry.

5.3 NHB REPORTING FORMATS

For HFCS to finalise their MIS, they need to understand not only their internal information requirements but also the reporting needs of NHB. Hence it is essential that NHB finalise its reporting formats and information requirements at the earliest.

5.4 ONGOING INDUSTRY DIALOGUE

During the process of finalising reporting formats or while monitoring the measures on an ongoing basis if the NHB feels that any additional measures or norms are required or any existing ones need to be changed, it is recommended that a dialogue be carried out with the industry. This will ensure that the industry is in a position to provide the required information without having to overhaul their existing information system.

5.5 NHB INTERNAL TRAINING

For effective implementation of the Regulatory and Supervisory system at NHB, it is essential to impart training to the staff in the supervisory department. The training will concentrate on clarifying the role to be played by the inspectors and supervisory agents in improving the effectiveness of the HFCs in managing their risks. Training on the mechanism to be adopted for inspection and also for the analysis of the information received from the HFCs will also be required.

APPENDIX A

List of Participants - Day 1

	Name of Company	Participants
1.	AB Homes Finance Ltd. Hyderabad	● Mr C Sudhakar, Vice President (Computers)
2.	BOB Housing Finance Ltd. Jaipur	● Mr S S Seth, Managing Director ● Dr N K Bhargava, Senior Manager
3.	Can Fin Homes Ltd. Bangalore	● Mr Y.S.Hegde, Managing Director ● Mr R.Shankar Prasad, Officer
4.	Cent Bank Home Finance Ltd. Bhopal	● R.K.Nagpal, CEO ● N.K.Jhala, Manager
5.	Dewan Housing Finance Corpn. Ltd. Bombay	● Mr V Jayakumar, Corporate Manager-Operations & Accounts ● Mr Xavier Rajan, Chief Internal Auditor ● Mr R P Deshpande, Regional Manager ● Mr Satish Kotian, Asst. Manager-EDP
6.	Fairgrowth Home Finance Ltd. Bangalore	● Ms S V Lakshmi, Programmer
7.	GIC Grih Vitta Ltd. Bombay	● Mr U Kamath, Chief Executive ● Mr Lalit Chugh, General Manager ● Mr Divakar K, Sr.Manager (Systems)
8.	Gujarat Rural Hsg Finance Corpn.Ltd Ahmedabad	● Mr Nitin Palany, Managing Director ● Mr Kamelesh Shah, Manager
9.	Housing Devlp.Finance Corpn.Ltd. Bombay	● Mr K M Mistry, ED ● Mr Conrad D'souza, Mngr-Management Services

List of Participants - Day 2 & 3

	Name of Company	Participants
1.	AB Homes Finance Ltd. Hyderabad	• Mr C Sudhakar, Vice President (Computers)
2.	BOB Housing Finance Ltd. Jaipur	• Dr N K Bhargava, Senior Manager
3.	Can Fin Homes Ltd. Bangalore	• Mr R.Shankar Prasad, Officer
4.	Cent Bank Home Finance Ltd. Bhopal	• N.K.Jhala, Manager
5.	Dewan Housing Finance Corpn. Ltd. Bombay	• Mr V Jayakumar, Corporate Manager-Operations & Accounts • Mr Xavier Rajan, Chief Internal Auditor • Mr R P Deshpande, Regional Manager • Mr Satish Kotian, Asst. Manager-EDP
6.	Fairgrowth Home Finance Ltd. Bangalore	• Ms S V Lakshmi, Programmer
7.	GIC Grih Vitta Ltd. Bombay	• Mr Lalit Chugh, General Manager • Mr Divakar K, Sr.Manager (Systems)
8.	Gujarat Rural Hsg Fin. Corpn.Ltd Ahmedabad	• Mr Kamelesh Shah, Manager
9.	Housing Devlp.Finance Corpn.Ltd. Bombay	• Mr Conrad D'souza, Mngr-Management Services

- | | | | |
|-----|---|---|---|
| 10. | Ind Bank Housing Ltd.
Madras | • | Mr A.R. Balarajan, Mngr (EDP) |
| 11. | LIC Housing Finance Ltd.
Bombay | • | Mr T Paul Diamond,
Chief Executive |
| | | • | Mr V S Rajamani,
Dy.General Manager (MS) |
| | | • | Mr Bhabhak, Area Manager |
| 12. | PNB Housing Finance Ltd.

New Delhi | • | Mr K.S.Shekar, Managing
Director |
| | | • | Mr C.K.Puri, Officer |
| 13. | SBI Home Finance Co. | • | Mr A K Dam, Managing Director |
| | | • | Mrs M Chakravarty,
Asst.Manager (EDP) |
| | | • | Mr Sanjib Bhattacharyya,
Asst.Manager (Operations) |
| 14. | Vysya Bank Housing Fin. Ltd.
Bangalore | • | Mr Gautum Ghosh
(Systems Executive) |
| 15. | National Housing Bank
New Delhi | • | Mr S.P.Ghosh,
CGM & Secretary |
| | | • | Mr Y.K.Garg,
CGM & Advisor - Technical |
| | | • | Mr B.Hanumantha Rao, AGM |
| | | • | Mr R.K.Pandey, RM |
| 16. | National Housing Bank
Bombay | • | Mr M.K.Rakshit, DGM |
| | | • | Mr J.P.Gupta, Manager |

APPENDIX A

- | | | | |
|-----|---|---|---|
| 10. | Ind Bank Housing Ltd.
Madras | • | Mr A.R. Balarajan, Mngr (EDP) |
| 11. | LIC Housing Finance Ltd.
Bombay | • | Mr V S Rajamani,
Dy.General Manager (MS) |
| | | • | Mr Bhabhak, Area Manager |
| 12. | PNB Housing Finance Ltd.
New Delhi | • | Mr C.K.Puri, Officer |
| 13. | SBI Home Finance Co. | • | Mrs M Chakravarty,
Asst.Manager
(EDP) |
| | | • | Mr Sanjib Bhattacharyya,
Asst.Manager (Operations) |
| 14. | Vysya Bank Housing Fin. Ltd.
Bangalore | • | Mr Gautum Ghosh
(Systems Executive) |
| 15. | National Housing Bank
New Delhi | • | Mr Y.K.Garg,
CGM & Advisor - Technical |
| | | • | Mr B.Hanumantha Rao, AGM |
| | | • | Mr R.K.Pandey, RM |
| 16. | National Housing Bank
Bombay | • | Mr M.K.Rakshit, DGM |
| | | • | Mr J.P.Gupta, Manager |

APPENDIX B

WORKSHOP AGENDA

Objective :

1. HFCs/ NHB to understand and agree on the risks to be monitored.
2. HFCs/ NHB to outline individual MIS implementation plans to monitor the above risks.

DAY 1 :

- 10.00 a.m. Welcome (R.Genx, Abt)
Introductory Remarks (Mr S.P.Ghosh, NHB)
- 10.15 a.m. Presentation on Risk Dimensions. (B.G.Ramola, PW)
- 10.45 a.m. Tea
- 11.00 a.m. Presentation on how a Rating agency looks at risk. (Subodh Shah, CRISIL)
- 11.45 p.m. Presentation on measures/ information for monitoring the risks. (B.G.Ramola, PW)
- 12.15 p.m. Participant Presentations and panel discussion on experience in monitoring risks with emphasis on systemic issues.
- 1.15 p.m. Lunch
- 2.00 p.m. Recap of Industry experiences and introduction of system options. (N.Suresh, PW)
- 2.45 p.m. Individual organisation selection of appropriate system option.
- 3.30 p.m. Summary of Implementation Approaches. (N.Suresh, PW)
- 4.00 p.m. Conclusion and Feedback.

DAY 2.

- 9.30 a.m. Information Capsule 1 : Specialised Risk management needs of Housing Finance Companies.
- 10.00 a.m. Definition, computation, analysis and interpretation of Credit Risk measures.
- 10.45 a.m. Tea
- 11.00 a.m. Definition, computation, analysis and interpretation of Interest Rate Risk measures.
- 11.45 a.m. Definition, computation, analysis and interpretation of Liquidity and Management Risk measures.
- 12.30 a.m. Definition, computation, analysis and interpretation of Capital Adequacy measures.
- 1.00 p.m. Lunch
- 2.00 p.m. Presentation on management, technical and operational issues in implementing HFC MIS for Risk Management.
- 3.00 p.m. Information Capsule 2: Overall approach to System Development.
- 3.30 p.m. Group activity to develop generic implementation plans.
- 4.30 p.m. Information Capsule 3: Technology options.
- 5.00 p.m. Feedback

DAY 3.

- 9.30 a.m. Presentation of generic implementation plans.
- 11.30 a.m. Tea
- 11.45 a.m. Information Capsule 4: Outsourcing / Inhouse development issues.
- 12.00 noon Development of individual HFC implementation plans.
- 1.15 p.m. Lunch
- 2.15 p.m Information Capsule 5: Organisation Issues.
- 2.30 p.m. Summary of Implementation plans.
- 3.00 p.m. Feedback and Conclusion.

APPENDIX C

TECHNOLOGY OPTIONS FOR IMPLEMENTATION OF THE MIS

In the housing finance Industry today, HFCs are in various stages of growth and readiness to implement MIS to monitor risks. Therefore, there is a need for the HFCs to understand the different technology options open to them and then select the most appropriate one for their current status, keeping in mind their future plans.

PW presented to the HFCs three different technology options. These options are detailed below.

C.1 Manual System

This option is best suited for low transaction volumes.

The advantages of this system include the fact that it can be started without delay and that technical personnel would not be required.

The constraints however are

- * It is a short term solution
- * Reliability (accuracy), control of data, timeliness may be in question
- * It is a manpower intensive option
- * The last, but most important constraint is that it would not be feasible to calculate some of the measures manually.

Implementation issues

Some of the implementation issues that will have to be considered are

- manual systems and procedures need to be developed.
- training on new procedures would be essential.
- the operations/ finance department can also handle the MIS function.

C.2 PC Based Computerised Systems

The option envisages stand alone computers or Local Area Networks at the head office and the branches. This option is recommended for medium transaction volumes.

The advantages of this option are

- * Reliability and security of data
- * Flexibility in reporting
- * User friendliness of the system

The constraints in the system are

- * Restricted database features
- * Online processing may not be possible

Implementation Issues

There are two approaches to implementation. They are Phased top down approach and the parallel approach.

Details of both the approaches are presented below.

Phased top down approach

Step 1

The first step involves the development and implementation of the Risk Monitoring and control system. The compounded or aggregated data can be stored and retrieved for preparation of analysis and control reports. This can be carried out in a low technology environment and requires a short time span for implementation.

Step 2

Phased implementation of the base systems is the next step. These are then integrated with computed data. The detailed information is stored in the base systems.

The base system development can be prioritised depending on the business requirements.

Parallel approach

When the volume of transactions is high, data for analysis cannot be computed manually. At this stage it becomes essential to adopt the parallel approach. This approach involves the enhancement/ development of base systems and simultaneous development of risk monitoring and control system from the base systems. Implementation efforts are higher and complex project management is required for this approach.

C.3 DBMS Based Computerised System

This would be most useful when the transaction volumes are high. Some of the advantages of this option are:

- * Online processing is possible
- * Highly flexible applications can be developed
- * Applications can be prototyped before finalising their specifications
- * Timeframe for application development is shorter
- * Offers higher reliability/integrity and inbuilt security

The constraints include

- * This option requires expensive hardware and software
- * Trained personnel are essential for software development as well as subsequent maintenance

Implementation Issues

Some of the implementation issues involved are

- Normally applications would have to be custom developed

- Requires strong IS department
- User training is essential
- Applications can be developed inhouse or outsourced
- Hardware would depend on the transaction volumes
- Data transfer and networking is important