IMPACT OF MIS IN MICROFINANCE ORGANIZATION

(A case study of Jeevan Bikas Samaj)

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RECOMMENDATION

This is to certify that the thesis

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DECLARATION

I hereby declare that the work reported in this thesis entitled **"Impact of MIS in Microfinance Organization"(A case study of Jeevan Bikas Samaj)** Submitted to Office of the Dean, Faculty of Management, Tribhuvan University, is my original work done in the form of partial fulfillment of the requirement for the Master's Degree in Business Studies under supervision of Shree Bhadra Naupane Shanker Dev Campus and Mr. Shankar Adhikari of Shanker Dev Campus.

ACKNOWLEDGEMENT

Microfinance program is become a powerful tool for poverty reduction. Proper MIS help the microfinance organization to effective and efficient implementation of microfinance program. I attempt to make clear about the new MIS support to fast, modern and efficient service. I believe the study help to establish proper MIS in microfinance organization. I am hopeful that this study will also serve as a stepping stone to the students of MIS and to those who wish to make further research under this topic.

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There may be some errors in my study, I apologize for the errors.

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ABBREVIATIONS

ADB	Asian Development Bank
ADBN	Agricultural Development Bank Nepal
AUA	Assets under Administration
BOP	Balance of Performance
CB	Commercial Bank
CBMIS	Computer Base Management Information System
CDF	Cooperative Development Fund
CRO	Credit Opportunity
CSD	Centre for Self-help Development
DBM	Decision Based Management
DBMS	Databas Management System
DSS	Decision Support System
DWH	Data Warehouse
EDP	Electronic Date Processing
FINGO	Financial Intermediaries Non Government Organization
FTE	Foreign Trade Exchange
GBB	Grameen Bikas Bank
GDI	Gross Domestic Income
IBM	International Business Machine
IBP	Intensive Banking Program
IT	Information Technology
JBS	Jeevan Bikas Samaj
KPI	Key Performance Indicator
MCPW	Micro Credit Project for Women
MFI	Microfinance Institution
MIS	Management Information System
MPS	Market Price Per Share
NBL	Nepal Bank Ltd.
NCCC	National Cooperative Consultation Committee
NCDB	National Cooperative Development Board
NGO	Non Government Organization
NRB	Nepal Rastra Bank
PCRW	Production Credit for Rural Women
PSL	Priority Sector Lending
RBB	Rastriya Banijya Bank
RM	Relationship Manager
RMDC	Rural Microfinance Development Centre Limited
RMP	Rural Microfinance Project

RNAC	Royal Nepal Airlines Corporation
ROA	Return on Asset
SFCL	Small Farmers Cooperative Limited
SFDP	Small Farmers Development Program
SKBBL	Sana Kisan Bikas Bank Limited
TPS	Transaction processing system
WDS	Women Development Section
YTD	Yield Total Deposit

CHAPTER - I

INTRODUCTION

1.1. Background

Information-the logical output of an information system is of vital importance to the managers of a firm to achieve short, intermediate, and long-range goals. There is a growing awareness that accurate and timely information is a vital resource of the firm and that an effective information system is a means of providing the needed information.

If the information system does not produce the information necessary for management to handle its operations effectively, an “out-of-control” condition may result and the firm may never recover. An examination of firms that have experienced difficult times over the years will verify this point.

Information, which is essence is the analysis and synthesis of data, is undoubtedly one of the most vital corporate resource. It is structured into models for planning and decision-making. Information is incorporated into measurements of performance and profitability. It is integrated into product design and safety methods. In other words, information almost recognized and treated as an asset in a modern organization.

Initially in businesses and other organizations, internal reporting was made manually and only periodically, as a by-product of the accounting system and with some additional statistics, and gave limited and delayed information on management performance. Previously, data had to be separated individually by the people as per the requirement and necessity of the organization. Later, data was distinguished from information, and so instead of the collection of mass of data, important and to the point data that is needed by the organization was stored.

The system provides information on the past, present and project future and on relevant events inside and outside the organization. It may be defined as a planned and integrated system for gathering relevant data, converting it in to right information and supplying the same to the concerned executives. The main purpose of MIS is to provide the right information to the right people at the right time.

The Concept of management information systems originated in the 1960s and become the byword of almost all attempts to relate computer technology and systems to data processing in business. During the early 1960s, it became evident that the computer was being applied to the solution of business problem in a piecemeal fashion, focusing almost entirely on the computerization of clerical and record – keeping tasks. The concept of management information systems was developed to counteract such in efficient development and in effective use of the computer. The MIS concept is vital to efficient and effective computer use in business of two major reasons:

It serves as a systems framework for organizing business computer applications. Business applications of computers should be viewed as interrelated and integrated computer – based information systems and not as independent data processing job.

In emphasizes the management orientation of electronics information processing in business. The primary goal of computer based information systems should be the processing of data generated by business operations.

A management information system is an integrated man – machine systems that provides information to support the planning and control function of manager in an organization.

The output of an MIS is information that sub serves managerial functions. When a system provides information to persons who are not managers, then it

will not be considered as part of an MIS. For example, an organization often processes a lot of data which it is required by law to furnish to various government regulatory agencies. Such a system, while it may have interfaces with an MIS, would not be a part of it, Instances of such systems is salary disclosures and excise duty statements. By the same token to sophisticated computer – aided design system for engineering purposes would also not be a part of MIS.

Generally, MIS deals with information that is systematically and routinely collected in accordance with a well-defined set of rules. Thus, and MIS is a part of the formal information network in an organization. Information that has major managerial planning significance is sometimes collected at golf courses. Such information is not part of MIS; however, one- shot market research data collected to gauge the potential of a new product does not come within the scope of an MIS by our definition because although such information may be very systematically collected it is not collected on a regular basis.

Normally, the information provided by MIS helps the managers to make planning and control decisions. Now, we will see, what is planning and control. Every organization in order to function must perform certain operations. For Example, a car manufacturer has to perform certain manufacturing activities, a wholesaler has o provide water to its area of jurisdiction. All these are operations that need to be done. Besides, these operations, an organization must make plans for them.

Also an organization must control the operations in the light of the plans and targets developed in the planning process. The car manufacturer must know if manufacturing operations are in line with the targets and if not, he must make decisions to correct the deviation or revise his plans. Similarly the wholesaler will want to know the impacts that his commissions have had on sales and make decisions to correct adverse trends. The municipal corporation will need

to control the tendering process and contractors who will execute the pumping station plans.

Generally, MIS is concerned with planning and control. Often there are elaborate systems for information that assists operations. For example, the car manufacturer will have a system for providing information to the workers on the shop floor about the job that needs to be done on a particular batch of material. There may be route sheets, which accompany the rate materials and components in their movement through various machines. This system per se provides only information to support operation. It has no managerial decision-making significance. It I not part of an MIS. If, however, the system does provided information on productivity, machine utilization or rejection rates, then we would say that the system is part of MIS.

MIS provides the following advantages.

1. It Facilitates planning: MIS improves the quality of plants by providing relevant information for sound decision – making. Due to increase in the size and complexity of organizations, managers have lost personal contact with the scene of operations.

2. In Minimizes information overload: MIS change the larger amount of data in to summarize form and there by avoids the confusion which may arise when managers are flooded with detailed facts.

3. MIS Encourages Decentralization: Decentralization of authority is possibly when there is a system for monitoring operations at lower levels. MIS is successfully used for measuring performance and making necessary change in the organizational plans and procedures.

4. It brings Co ordination: MIS facilities integration of specialized activities by keeping each department aware of the problem and requirements of other departments. It connects all decision centers in the organization.

5. It makes control easier: MIS serves as a link between managerial planning and control. It improves the ability of management to evaluate and improve performance. The used computers has increased the data processing and storage capabilities and reduced the cost.

6. MIS assembles, process, stores, Retrieves, evaluates and disseminates the information.

Information system overview

A system which assembles, stores, processes, and delivers information relevant to an organization (or to society) in such a way that the information is accessible and useful to those who wish to use it, including managers, staff, clients, and citizens (IFIP;1885:122, BCS;2001:12). An information system is a human activity (social) system which may or may not involve the use of computer systems.

“The mission for information systems in organizations is to improve the performance of people in organization through the use of information technology.” (McNurlin and Sprague; 1989:65). Thus, an information system takes an organization from the position of computer orientation to information orientation. In this regard, IS focus is the improving organizational performance via its people who make up the organization. And the resource for this improvement is information technology.

A system that uses information technology to capture, transmit, store, retrieve, manipulate or display information that is use in one or more business processes. Hence, information system in an organization, within managerial process is used for operational control, management control, and strategic planning. (Alter; 1995:136)

Thus, information is a vital ingredient for the operations and management of any organization. The scope of a formal information system in an organization

is limited by the data, that can be obtained; the cost of obtaining, processing and storing the data; the cost of retrieval and distribution; the value of the information the user and the capability of the humans to accept and act on the information.

CBIS is designed to both reduce the cost and increase the capabilities of organizational information processing and increase organizational effectiveness. Consequently, in the last two decades, information technology has emerged in the world affecting our personnel, social and public life and has made a significant on quality of life.

Thus, in the changing environment of world, Information technology (IT) helps to optimize the use of scares resources through intelligent information support for decision-making and helps further in its implementation by supporting coordination effort without wasteful delays,. Decision-making has becomes a very complex process due to competitive environment, scare resources, time pressures and unavoidable compulsions to achieve goals. It replaces old outdated slow methods by fast ones. It allows you to handle big and complex data and its structure with ease, which was never possible earlier. It helps you test the solution without implementing them.

The distance and access are no longer technical or operational problems, as information stores anywhere can be used without its possession. It has affected the work culture in organization and life style of each individual. Information, therefore, it is considered as sixth, productive resources along with Men, machines, materials, money and management. It can be developed only by designing proper information systems for the management of the organization.

1.2. Problem Formulation

Without information, it is impossible to make the right decisions, and without proper information systems, it is impossible to get the right information. One of the most important contributions of information technology and systems to business firms is the reduction in information uncertainty and the resulting improvement in decision-making (Laudon and Laudon; 2006:5-9). Management has indicated that they do not have enough adequate information about various aspects of the business to support decision-making. The management reports they do currently receive are produced manually or Struggle

Management wants to improve the performance and efficiency of the organization by taking action on this issue. The purpose of the assignment is to determine what activities and changes are necessary to improve the Management Information System (MIS) in a way that it can deliver upon the information requirements.

The problem formulation therefore is:

What are the problems with the current management information system and how can these is solved to meet the information requirements?

1.3. Research Questions

The research questions have been formulated based on the steps that the researcher has taken in order to give an answer to the problem as formulated. In order to develop an effective information systems plan, an organization must have a clear understanding of its information requirements (Larsson and Malmsjö, 1998, Laudon and Laudon, 2006); this will be the first step. The next step will be an analysis of the current management information system and the

resulting available management information. Step 3 will be an analysis of the difference between the current and desired situation and finally, based on the results of the gap analysis, the researcher will make a proposal of how to diminish this Gap.

The main research questions are:

1. What are the management information requirements for senior management?
2. How is the current MIS structured, how does it process data and what is the outcome?
3. What is the gap between the current and the desired situation?

1.4. Objectives

The following are the key objectives of this project:

- Define the information and information system needs and requirements of the different (senior) managers
- Make an analysis of the current MIS
- Make a gap analysis of the differences in the current and desired situation
- Make recommendations about how to improve MIS

1.5. Significance of the study

The main study is that the MIS plays a vital role in the management, administration and operation of the organization.

This study has been conducted to find out information flow, day to day to operation, decision making, planning & environment to get information from MIS as well as some factors such as the market forces, technology changes, etc. the significance arises out of the complexity of decision making the human factor in decision making, the organizational & behavior aspects, and the uncertain environments. The MIS design addressing these significant factors turns out to be the best design. Since the MIS satisfies the information need of the people in particulars, the design of MIS cannot be common or universal for all the organization. The principles of design & the use of the information concepts in design do not change but when it comes to the applicants, the design had to give a regard to the organization structure, the culture, the attitudes and the beliefs of the people, strength and the weaknesses of the organization.

1.6. Limitation of study

The study focused on the impact of MIS in Jeevan Bikas Samaj (JBS). This study is not free from the following limitation.

1. This study is based on secondary data obtain from Jeevan Bikas Samaj (JBS).
2. Use of personal interview as primary source would not be free biases.
3. Limited time dimension made difficult to make thoroughly analysis.

1.7. Organization of the Study

This study has been organized into five Chapters.

Chapter I : Introduction

Chapter I introduce the major issues related to the MIS, Research question, problem formulation, objectives, significance and limitations of the study.

Chapter II :Literature Review

This Chapter is the brief review of literature related to this study. It includes a discussion on the conceptual framework and review of the major studies. It gives an overview of the related literature done in the past related to this study.

Chapter III : Research Methodology

Chapter III, Research Methodology, describes the different methodologies employed in this study. Sources of data are mentioned and described in this chapter.

Chapter IV : Presentation and Analysis of Data

This Chapter presents and analyzes the data obtained during the study. Different tools and techniques of data analysis have been undertaken for the purpose of analysis of data.

Chapter V : Summary, Conclusion and Recommendations

This chapter includes the summary, conclusion and the recommendations of the study. The findings are included in this chapter along with the suggestions and their recommendations.

Bibliography and Appendices have been given at the end of the study.

CHAPTER – II

REVIEW OF LITERATURE

Literature review is basically a “Stock Taking” of available literature is one’s field of research. The literature survey provides the student with the knowledge of the status of their research. In social science there is no dearth of literature. The library is a rich storage base for all kinds of published materials including thesis, dissertations, business reports, government publications etc.

The purpose of literature is thus to find out what research studies have been conducted in one’s chosen field of study and what remains to be done. It provides the foundation for developing a comprehensive theoretical frame work from which hypothesis can be developed for testing. The review of literature also minimizes the risk of pursuing the dead ends in research.

2.1. Conceptual Framework

The concept of the MIS has evolved over the period of time comprising many different facets of the organization functions. MIS is necessary of all the organization.

The initial concept of MIS was to process data from the organization and presents it in the form of reports at regular intervals. The system was largely capable of handling the data from collection to processing. It was more impersonal, requiring each individual to pick and choose the processed data use it for his requirements. This concept was further modified when a distinction was made between data and information. The information is a product of an analysis of the raw data. It, was therefore, demanded that the system concept should be an individual-oriented, as each individual may have a different orientation towards the information.

This concept was further modified, that the system should present information in such a form and format that it creates an impact on its users, provoking a decision, an action or an investigation. It was later realized that even though such an impact was a welcome modification, some sort of selective approach was necessary in the analysis and reporting. Hence, the concept of accepting reporting was imbedded in MIS. This concept remained valid till and to the extent that the norm for an exception remained true and effective.

Since the environment turns competitive and is ever changing, fixation of the norm for an exception became a futile exercise is least for the people in the higher echelons of the organization. The concept was then evolved that the system should be capable of handling a need- based exception reporting. This need may be either of an individual or a group of people. This called for keeping all data together in such a form that it can be accessed by anybody and can be proceed to suit his/her needs. The concept is that the data is one but it can be viewed by different individuals in different ways. This gave rise to the concept of database and the MIS based on the DATABASE proved much more effective.

Over a period of time, when these conceptual developments were taking place, the concept of the end-user computing using multiple databases emerged. This concept brought a fundamental change in MIS. The change was decentralization of system and the use of the information becoming independent of computer professionals. When this became a reality the concept of MIS changed to a decision making system. The main function of the computer department is to manage the information resource and take the information processing to the users. The concept of MIS in today's world can be understood as a system which handles the database, provide computing facilities to the end-users and gives a variety of decision making tools to the users of the system.

The concept of MIS gives high regard to the individual and his ability to sue the information, an MIS gives information through data analysis. While analyzing the data, it relies on many academic disciplines. These include the theories, principles and concepts from the management science, management accounting, and operations research, organizational behavior, engineering, computer science, psychology and human behavior, making MIS an effective and useful tool. These academic disciplines are used in designing the MIS, evolving the decision support tools for decision making (*Jawadekar*, 2000:7-10).

The foundation of MIS is the principles of management and its practices. MIS uses the concept of management control in its design and relies heavily on the fact that the decision maker or the manager is the human being and is a human processor or information.

MIS can be evolved and customized for a specific objective if it is evolved after systematic planning and design. It calls for an analysis of a business management views and policies, organization culture and the management style. The information should be generated in this setting and must be useful in managing the business. This is possible only when it is conceptualized as a system with an appropriate design. The MIS, therefore, relies heavily on the system theory. The system theory offers solutions to handle the complex situations of the input and output flows. It uses theories of communication which helps to evolve a system design capable of handling data input, processing and output with the least possible noise or distortion in transmitting the information from a source to a destination. It uses the principles of system design viz. an open system of a closed system. An open system of the MIS offers an ability of continuous adjustment of correction in the system in line with the environment changes in which the MIS operates. Such a design helps to keep the MIS tuned with the business management needs of the organization.

The concept, therefore, is a blend of principles, theories and practice of the management, information and system giving rise to single product known as Management Information System (MIS).

2.2 Concept of MIS

After having the concept of the three components of MIS, viz, Management Information and System, let us try to understand its definition. While discussion various components, it has been clearly established that decision-making is the essence of management and for taking rational decisions; Management Information (MIS) is an essential and vital input. (Goyal: 2000: 14)

Further, to obtain MI, logical and well defined methods of information, which can be implemented by joining certain, inter-related elements are essential. Thus, if we simply combined all the above facts, we may devise our definition of MIS as follows:

Management information system is a system consisting of people, machine, procedures, and database and data models, as its elements. The system gathers data from the internal and external source of an organization; processes it and supplies Management Information to assist managers in the process of decision making. Here the word system implies that MIS follows the system approach which means a holistic approach and is based on the concept of synergy where the output is greater than the sum of its parts. Thus, it clearly indicates that MIS is not a single system; rather it is an integrating system where parts (sub-systems) fit into an overall design.

A diagrammatic representation of the concept of MIS has been shown as below. The purpose of MIS as understood today is to rise managing from the level of piecemeal steady information, intuitive guesswork and isolated

problem solving to the level of system insight, system information, sophisticated data processing and system problem solving.

2.3 Nature and Scope of MIS

The concept of MIS is inter-disciplinary in nature, i.e. it has borrowed its concept from a large number of disciplines like Accounting. Computers, organization, Management, Operations Research and Behavioral Sciences, etc. (*Goyal*: 2000: 15)

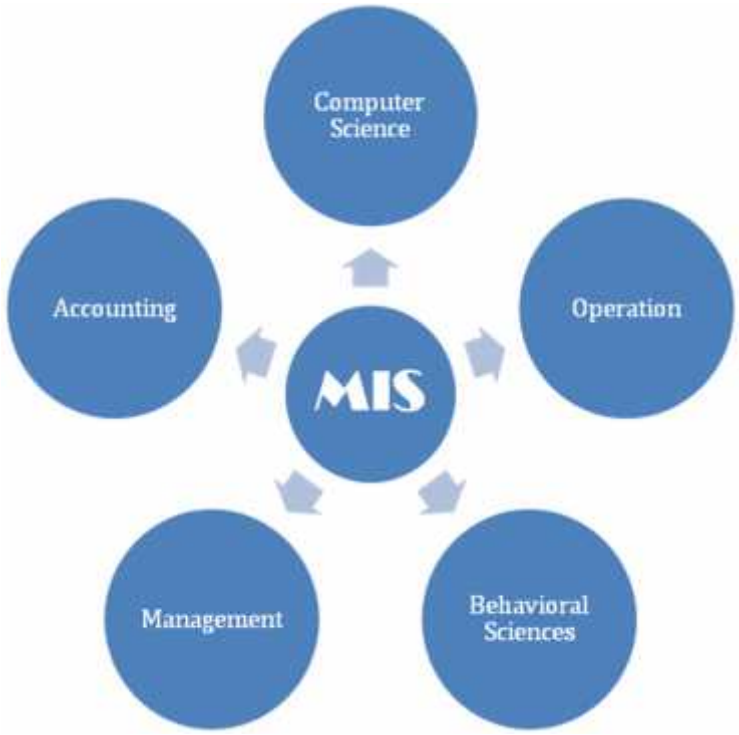


Figure 2.1 : Interdisciplinary Nature of MIS

Because of its interdisciplinary nature, MIS is neither termed as a pure science nor an art, rather it is considered as a combination of both. An information system is a logical system, which is concerned with 'how' something is being accomplished and thus may be differentiated from a physical system, which is

process itself and is concerned with the content or ‘what’ is going on. MIS, in fact, encompasses both physical and information systems.

There has been a lot of debate on the issue whether MIS is more management-oriented or computer oriented. Though there are advocates of both the sides, MIS should be considered more of management subject than of computer because of simple logic that computer are just a tool in the hands of managers. Computers are used for their characteristics like accuracy, speed and capacity to handle large amount of data. Thus, computers find application in MIS and because of this MIS may be termed as Computer-Based MIS (CBMIS).

In real world, a variety of information systems exist which may be manual information system where people used tools such as pencils and paper or even some machines, such as typewriters and calculation to convert raw data into information. Other systems are CBMIS that use computer. However, because of high potential of computer, almost every organization would like to make use of high potential of computer; almost every organization would like to make use of CBMIS. In fact computer applications have increased the scope of MIS to a great extent. Nowadays MIS finds application in all functional areas of every type of business organizations at all levels. As has already been discussed, MIS caters to information needs of managers in an organization, thus its scope lies in structured as well as unstructured type of information which, could be gathered from internal as well as external sources of the organization.

2.4 MIS and its Evolution

Since the adventures development of BOP system basically connected with those of periodical development in computer technology, the trend of management has changed drastically in the recent era corresponding to the changing nature of complexities. As such, the modern management is quite related to the availability of data and information for a particular purpose of

decision making and in the other extreme mere availability of data and information does not fulfill the managerial objectives, but the reality lies in proper processing of data and information so as to figure out the decision. We see that the processing function of data is today, accomplished by the assistance of the machine. And now it is clear that as the value of data for managerial purpose is quite tremendous, and it is the value inter-linked with the processing and management, today's management is the process of obtaining and maintaining of sufficient data and information for timely and correct decision making. So the evolution of MIS is older nor more than by the evolution of computer technology in data processing.

The idea of an information system to support management and decision making predates the use of computer, which have extended the organization capabilities for implementation such a system. Many of the ideas which are part of MIS evolved as part of other discipline. Gordon Better Davis has suggested four major areas of concept and systems development which are especially significant in tracing the evolution of the MIS concept –"Managerial Accounting", Management science, management theory, and computer processing." (*Davis*; 1974:8). According to this idea, the MIS concept may be viewed as a substantial extension of the concept of managerial accounting taking into consideration the ideas and techniques of management science and the behavioral theories of management and decision making. The capabilities of computer have added to the development of the MIS concept because new hardware in conceptualizing the information system for an organization.

Whenever the MIS is discussed it is almost invariably stated that a management information systems does not necessarily require a computer and that many forms of management information are not computer based. It means that the evolution of computer technology did not bring the MIS concept but what is most important to know that is many practical difficulties, environmental sophistication, and theoretical complexities emerged for sufficient amount of

data, and its proper handling procedures so as to reach a rational decision. In early stages, computer were not originally planned for information processing but this is now the major use to which they are applied.

2.5 The different views of MIS

There has never been complete agreement on what the term MIS means. Although there have been a seemingly infinite number of views, we can boil them all down into three categories. One view of MIS is that it has been replaced. A second is that MIS includes all business applicants of the computer. A third is that the MIS is an organizational resource.

The view that MIS has been replaced:-

The MIS was a dramatic break from EDP, recognizing that the computer could be used for something other plan processing data. During the period from mid-1960s until the mid- 1970s, there were only two computer applications in business- EDP and MIS. Of the two, MIS received most of the attention. However, when the DSS concept came along in the early 1970s, it lured many supporters from the MIS camp.

The weakness of this view that DSS replaced MIS is the argument that the MIS did not support decision making. From the very beginning, the main objective of the MIS has been to help managers make decisions. MIS pioneer, Joel D. Aron IBM, defined MIS in 1969 as “an information system which provides the managers with that information he needs to make decisions.”

Early MIS failures were not due to a faulty concept but to faulty implementation of a concept that remains inherently sound. The MIS concept was and still is, the recognition that managers use information in making decisions, and the computer can provide some of that information.

The view that MIS includes all computer applications:-

Another group did not attempt to completely eliminate MIS when DSS came along but, instead gave it a new role. MIS became the umbrella for all business application of the computer. This view is popular one. Nowadays, everywhere we can find MIS, may be on college, there are MIS professors, and MIS research centers, and in college libraries you find MIS journals. In many companies you find that the computer department is named the MIS department. The problem with this view, however, is that by making the mean everything, it means nothing. There is no specific computer application that can be labeled MIS.

The view that the MIS is an organization Resources:-

One way to overcome the limitations of the first two views- that the MIS still exists and that it must mean something specific- is to view MIS as it was originally conceived- as an organizational resource.

2.6 Designing an Effective MIS

Practitioners in the field have broadly classified the approaches to be taken for development of MIS into two classes: Top down approach and bottom up approach.

Top down approach beings by defining the objectives of the organizations and constraints. It proceeds to identify activities and decision situations which are followed by determining of information requirements and subsequent development of data base and systems. The bottom up approach start from individual applications and gradually integration takes place and more files are added in response to real needs. MIS, in the true sense, can be designed mainly

through the top down approach, yet in practice a combination of both the approaches works out satisfactory.

As defined already, Management Information System serves and supports the process of managerial activities. With the above concept, the steps involved in the design of MIS can be started as follows:

1. Understanding the management process of an organization. Examining the existing information set up.
2. Conceptualizing the information requirements to support the management process.
3. Identifying the appropriate sources of data/inputs.
4. Determining the methodology/techniques of covering the data into information.
5. Deciding appropriate technology (manual/semi-automated/fully automated) for translating data into information.
6. Preparing a master plan outlining the applications, priority, and time-schedule of implementation, resources required and the benefits from the system.
7. Implementation is a phased manner.

   “The information we have, is to what we want,

   The information we want, is not what we need,

   The information we need, is not available.”

2.7 Models and theories

Based on the three main research questions, which are the three steps in the process, an outlay for this thesis can be determined. For each of the four steps I have selected some theories and models that have been used as a guidance to complete the steps. Each research question will be answered in a separate chapter.

2.8 Information systems

An information system can be defined technically, as a set of interrelated components that collect (or retrieve) process, store, and distribute information to support decision making and control in an organization (*Laudon and Laudon*; 2006:89). Additionally, information systems may also help managers and workers to analyze problems, visualize complex subjects, and create new products. Three activities in an information system produce the information that organizations need to make decisions, control operations, analyze problems, and create new products or services. These activities are input, processing, and output. Input captures raw data from within the organization or from its external environment. Processing converts this raw input into a more meaningful form. Output transfers the processed information to the people who will use it or to the activities for which it will be used. Information systems also require feedback, which is output that is returned to appropriate members of the organization to help them evaluate or correct the stage.

(Laudon and Laudon; 2006:96) describe an information system as a socio-technical system. Though they are composed of machines, devices, and physical technology, they require substantial social, organizational, and intellectual investments to make them work properly.

2.9 Management information systems (MIS)

Definitions

A management information system is an information system used for supporting decision making in general on all levels in an organization. (*Larsson and Malmsjo*; 1998:106) MIS serve the management level of the organization, providing managers with reports and (online) access to the organization's current performance and historical records. Typically, MIS are oriented almost exclusively to internal, not environmental or external, events. MIS primarily serve the functions of planning, controlling, and decision making at the management level. (Laudon and Laudon; 2006:106)

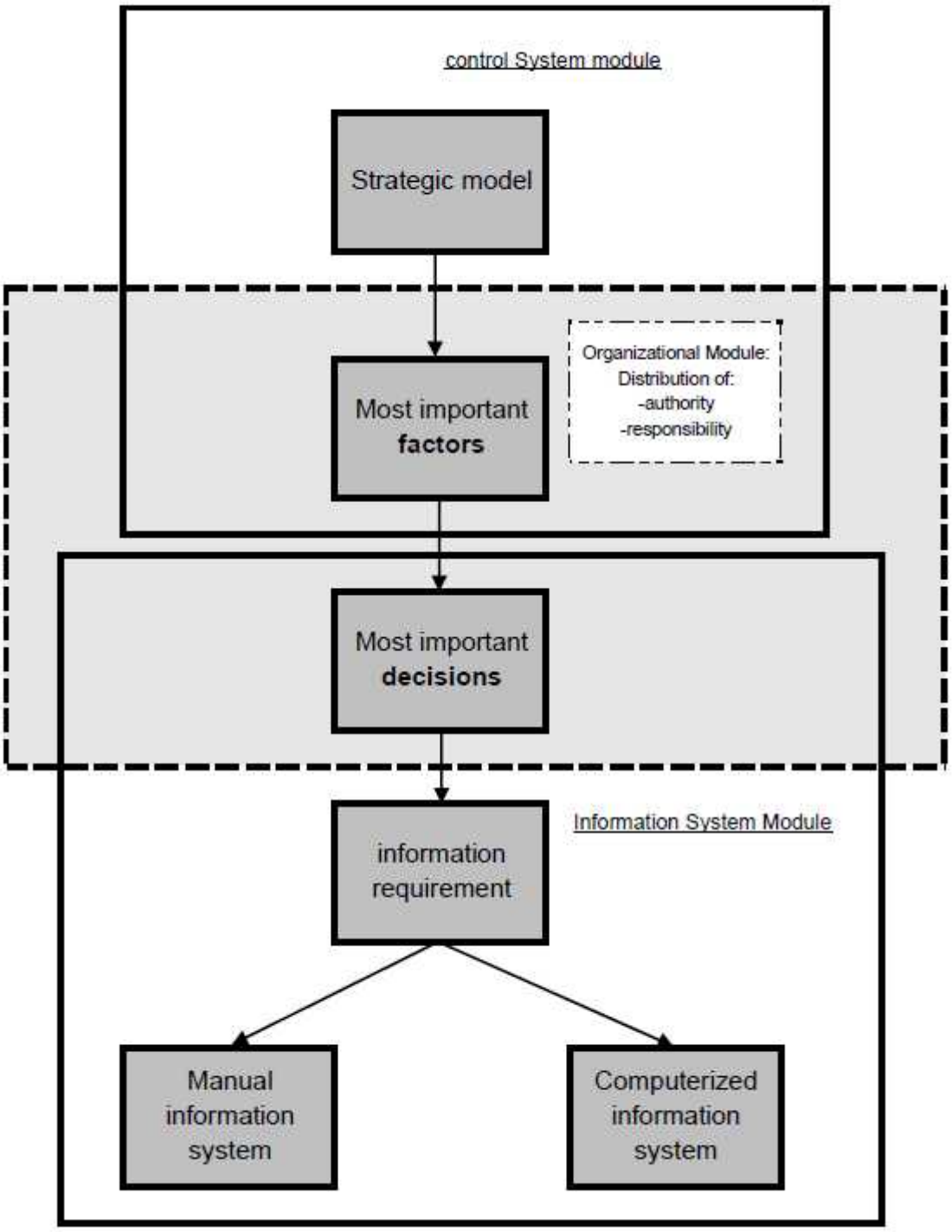


Figure 2.2 : Control System Model

Lewis (1994) indicates that an information system should be seen as a servant-system to the master-system of the whole business organization. “This form of relationship is of particular importance with regard to information systems as this is the relationship between an organizational information-system and the organization that it serves. An obvious consequence is that it is impossible to analyze the operations of an information-system or design a new one without first having a clear understanding of the activities and the objectives of the business system that it serves. One of the failings of the past is that computer professionals, and the logic of the approaches that they employ, have not taken adequate notice of the importance of this relationship and viewed the creation of information-systems to be an end in itself, rather than as a means to support the business”

The study of MIS arose in the 1970’s to focus on the use computer-based information system in business firms and government agencies (Laudon, 1974; Davis and Olson, 1985). MIS combines the work of computer science, management science, and operation research with a practical orientation toward developing system solutions to real-world problems and managing information technology resources. It is also concerned with behavioral science, and operations research with a practical orientation toward developing system solutions to real-world problems and managing information technology resources. Laudon and Laudon argue that no single approach effectively captures the reality of information systems. The successes and failures of information systems are rarely all technical or all behavioral.

2.10 Management information requirements

To evaluate and define the Management information (system) requirements, I will use a methodology developed by Larsson and Malmsjö (1998). They use a methodology for developing management information systems based on

management information requirements. In order to design a good MIS it seems logical, that the first step is to determine the needs and the requirements of management, but Larsson and Malmsjö indicate that previous research is mainly focusing on data processing technique, whereas information requirement analysis has been given less attention.

Based on their experience and the arguments of authors like Van Gigch (1978, 1991), Ackoff (1970) and Churchman (1971) Larsson and Malmsjö argue that many of today's problems with system development are caused by the fact that a "system improvement" view instead of the "systems design" view, dominates. System improvement can be seen as making improvements within the existing boundaries of the system. The designer approach, on the other hand, is to discuss and evaluate the goals of the organization and then analyze possible ways to reach these goals.

The design view that Larsson and Malmsjo incorporate in their methodology compromises a goal orientation, a top down approach, and a decision perspective. They created a methodology called Decision Based Management (DBM). It concentrates on decisions and on the most important factors (key performance indicators) influencing the goals of an organization. Laudon and Laudon describe a similar strategy with an analysis of the critical success factors and goals to determine management information requirements, which are the basis for the development of management information systems. The result of this methodology should lead to an improved relevancy of the MIS, more in line with the real need of managers.

Information quality

Information/data quality has many dimensions that more or less attribute all aspects of data/information. It can be defined as "fitness for use", which makes the concept of data quality relative. Some data can be very useful to some

persons, while the same data can be useless for others. Hence, data can be accurate, but when not sufficiently timely it can lose its value.

Laudon and Laudon (2006) define seven dimensions of information quality:

- Accuracy: Do the data represent reality?

- Integrity: Are the structure of data and relationships among the entities and attributes consistent?

- Consistency: Are data elements consistently defined?

- Completeness: Are all the necessary data present?

- Validity: Do data values fall within defined ranges?

- Timeliness: Are data available when needed?

- Accessibility: Are the data accessible, comprehensible and usable?

Improvements

To indicate what needs to be improved and implemented the MoSCoW method developed by Clegg and Barker (1999) is used. MoSCoW, is a method used in business and particularly in software development to get an understanding of the importance customers place on the delivery of each functional requirement. It prioritises the requirements from absolutely necessary to “would like to have in the future”.

MoSCoW stands for:

- M - MUST have this.

- S - SHOULD have this if at all possible.

- C - COULD have this if it does not affect anything else

• W - WON'T have this time but WOULD like in the future.

The framework consists of three partly overlapping modules:

The Control System Module, Organizational Module and Information system Module. The first module comprises step 1, which is an analysis of the goal and economy of the organization, and step 2, which is an analysis of which factors are important for reaching the goal. The next module, Organizational Module, overlaps with the first module, as it embraces step 2 and step 3, where the important decisions influencing the factors found in step 2 are mapped. The last module, the Information System Module, overlaps with the second module, as it embraces step 3 and step 4, where the information needed in the decision making defined by step 3 is analyzed.

2.11 Evolution of Micro-Finance

The term microfinance was not used in earlier part of the history of rural microfinance. It has been found used in Nepal only in the later part of 1990s. Rural credit in Nepal began in 1956 with the opening of Credit Cooperatives in Chitwan Valley to provide loans to the re-settlers coming from different parts of the country.

The government through the creation of the Cooperative Development Fund (CDF) arranged some credit support to the re-settlers through those cooperatives. In 1963, the government established the Cooperative Bank, which was later converted into the Agricultural Development Bank Nepal (ADBN) in 1968. The Cooperatives faced problems of shortage of fund for credit disbursement to their members on the one hand and misappropriation of borrowed fund for personal uses by some of their officials on the other. Hence, the government commissioned a fact-finding mission in 1968 to probe the operations of 1489 cooperatives then registered with the Department of

Cooperatives and the mission found most of them at defunct stage and recommended for their liquidation.

Thereafter, the government introduced the Cooperative Revitalization Program in 1971. It authorized the Agricultural Development Bank Nepal to run cooperatives under its guidance and management. In 1976, 'Sajha Program' was launched and the Cooperatives were renamed as 'Sajha Societies'. The compulsory savings collected under the Land Reform Program of 1964 (2021 B.S) were converted into the share capital of the Sajha Societies.

The NRB conducted a benchmark survey in 1983/84 to assess the situation of the cooperatives. The study found that 94% of cooperatives were dealing with transactions of agriculture inputs and 85% were also found extending credit. Most of the cooperatives were running at losses and over 75% of the outstanding loan was overdue for more than 1 year. ADBN launched the Small Farmers Development Program in 1975 – first as pilot project at two sites, Sakhuwa Mahendranagar of Dhanush district in the Terai and Tupche of Nuwakot district in the hills.

The strategy was to organize small farmers, tenants and landless laborers into groups and strengthen their receiving mechanism for tapping resources from service delivery agencies. Credit was provided under group guarantee. It also focused on developing a habit of thrift and personal savings among the members of the groups. They also started group savings to realize self-reliance in financial resources. A total of 142,711 members who were organized into 19,597 groups were benefited from the program by July 1991/92.

After the reinstallation of multiparty democracy in 1990, the government appointed a seven member National Cooperative Consultation Committee (NCCC) and dissolved the 'Sajha Central Committee'. It also set up a National Cooperative Development Board (NCDB) constituted of 11 members to provide policy directives to the cooperatives. The government enacted a new

Cooperative Act in 1992 to ease promotion and development of cooperatives as a vehicle of economic development in the rural areas.

The government also emphasized the role of cooperatives for extending credit facilities and other services to the rural people in its Eight National Plan. The Nepal Rastra Bank (NRB) initiated Small Sector Lending in 1974 directing the commercial banks (CBs) to invest 5% of their deposit balance in Small Sector, which was later designated as the "Priority Sector Lending" in 1976. The NRB subsequently initiated "Intensive Banking Program" (IBP) in 1981 to boost up PSL lending to the low income group and required CBs to raise PSL to 8% of CBs' loans and advances, which was further raised to 12% in 1989. The main partners of PSL were the Nepal Bank Ltd. (NBL) and the Rastriya Banijya Bank (RBB) - the two state controlled CBs. The share of NBL and RBB in rural credit supply was 4.1% and 2.4% in the Sixth and 12.3% and 6.7% in the Seventh Plan periods. Loans under PSL were classified into agriculture, cottage industries and services. Target groups under PSL are low-income families with Rs. 2,511 or less as per capita income per year.

The beneficiary must contribute 20% of the project cost if the loan size was more than Rs. 15,000. NBL and RB charged 15% to 16% interest rates on priority sector loans. They provided loans up to 80% of the appraised value of the collateral for low income and 70% for the high-income families. However, these CBs provided loans to the group members of Production Credit for Rural Women (PCRW) formed by Women Development Section (WDS) of the Ministry of Local Development and the groups formed by the bank staff without collateral on just group guarantee. The loan limit for such loans was Rs. 30,000. The Grameen Bank model of Bangladesh was replicated in Nepal with the establishment of Eastern and Far-Western Grameen Bikas Banks (GBBs) in 1992.

The target groups included in Tarai the farmers with holding less than 1 Bigha (0.67 ha) and in the hills with holding less than 10 ropani (0.5 ha), and the landless. It followed group approach in extending credit. Credit discipline was given top priority and loans were extended without collateral security on group guarantee. The board of directors of the GBBs comprised of the NRB and CB representatives and is headed by the Deputy Governor or Executive Director of NRB. The share capital of the first two GBBs was mainly contributed by the government and the NRB (75%), and by the CBs (25%). The first two GBBs started functioning from the middle of 1993. They charged 20% interest rate and the main source of fund for lending came from NRB and CBs.

In the meantime, two NGOs – the Nirdhan and the Centre for Self-help Development (CSD) also launched microfinance programs replicating Grameen model in 1993 and 1994 respectively. The financial Intermediaries Act was enacted in 1998 to regulate the financial intermediaries NGOs (FINGOs) on carrying out microfinance activities. This was claimed to be a breakthrough in legalizing the operation and activities of NGOs as microfinance operators. With the enforcement of this Act, two FI-NGOs, Nirdhan, and the Centre for Self-Help Development (CSD) also got registered under it. Later 47 NGO got license from the NRB to operate as FI-NGOs. In 2004, the government introduced the Banks and Financial Institutions Ordinance (which was converted into an Act in 2006), which has a provision of licensing microfinance banks also as class 'D' banks. As a result, 13 microfinance banks have been issued license by the NRB till the date.

In order to make available small wholesale funds to cooperatives and NGOs providing loans to the low income groups, the government had created a fund called Rural Self-Reliant Fund in 1991with Rs. 20 million contributed by the government. The government with the assistance from ADB and NRB also established the Rural Microfinance Development Centre Limited (RMDC) in 1998, to provide larger wholesale loans to MFIs through implementation of the

ADB assisted Rural Microfinance Project (RMP). After the operation of RMDC, several MFIs were added in the microfinance market and the coverage by the microfinance institutions also increased with faster speed.

The government had also instituted another wholesaler, the Sana Kisan Bikas Bank Limited (SKBBL) in 2001 to provide wholesale funds to the Small Farmers Cooperative Limited (SFCL) in 2001. With all these initiatives and efforts microfinance has gained a new momentum as an industry. Besides all these self help groups also were promoted by several rural and community development projects of the government and donors to provide small credit to the self-help group members through grants for seed funds.

The evolution of the micro-finance sector in Nepal

- Credit co-operatives were established in the 1950s.
- Co-operative bank was established in 1963
- Small farmer groups were established under SFDP (1970s)
- SFDP was established under ADB/N (1975)
- Commercial banks began to follow priority sector lending directives (1974)
- The IBP program tries to involve commercial banks in micro-credit (1981)
- Gender based micro-credit - PCRW (1982)
- Gender programs refined - MCPW (1994)
- Replication of Grameen Banking model (1992)
- Co-operative act was established to support the credit cooperatives (1992)
- Government-run MF programs - Bisheswor with the Poor, Women's Awareness program, government peace movement, etc.

2.12 Review of Journals & Articles

Subba (2003) has published an article "Developing human Resource in IT" where he has his opinion that "In the history of civilization, no work of science and technology had so comprehensive impact on the course of human development as Information Technology (IT). Nothing has influenced human civilization as IT in modern times has, changing almost all aspects of human activity like communication, trade, culture, education, entertainment, research, information and knowledge. The advent of IT, which particularly unfolded in the last three decades, is vastly extending men's intellectual inviting a paradigm shift in how we live in this world.

Only universal literacy and high standard of education can enable people to together skills to be employed. IT decreases isolation and the divide between the people in rural and urban areas Nepal, which has missed the agriculture and industrial revolution due to historical reasons, can re-cover the lost time and opportunities with IT revolution. For this, Nepal needs a national policy with a national vision, specific goals and strategies to achieve these goals. To achieve these goals, Nepal's effort should be directed towards capacity building in IT (www.can.org.np).

Pradhan (2003) has published his article "Economic Impacts of Information Revolution", where he has his opinion that "Think globally and act locally" is practiced differently in Nepal, especially in information technology sector. We "see globally and relish locally." All our leaders, bureaucrats and entrepreneurs have seen the progress of the whole world due to titanic development of information technology, and believe Nepal to take the same course, without performing anything. Despite IT sector's potentiality, Nepal has been unable to take even minimum benefit from the IT sector for the economic development of the country.

When a few pioneer entrepreneurs introduced the prospects of IT into the country, the country was far ahead than many developed countries around the world, not only South Asia. We also realized the importance of courses on computer and information technology along with all other countries of the world. But our lead into IT sector has gone into oblivion in the last half a decade, as failed to be competitive in rapidly unfolding changes in IT sector.

It all happened basically because the bureaucrats and politicians could not realize the importance of IT sector. They only took IT as the increase in number of computer they never comprehend the importance of computerization for economic development. The increasing number of computer is not just like increased number of typewriter. In fact the networking of computer has evolved a mammoth information society which has turned this whole world into a village. Information technology is important to the nation not only because it's advancement in science and technology and the country's competitiveness, but because of its impacts on overall aspects of general public's day to day living. The impacts of information technology on our society, economy, and workface include massive changes in the nature of work, commerce, education and training, entertainment, financial management, and quality of life. Understanding these changes will enable rational decisions to be mad in Government and the private sector in allocating resources and planning policies to take advantage of the opportunities that Information technology brings to society. Information technology promises advances in three areas. Firstly, by increasing the power of information storage, retrieval, and processing systems it will increase productivity in the services sectors that rely on information. Secondly, the improved communication made availability by the internet will increase the extent of the market and enhance competition. In addition, it will allow more geographical distance between parts of a production process. Finally, it offers the possibility of revolutions in education

and in innovation, perhaps permanently increasing the rate of technological progress and diffusion (www.can.org.np).

2.13 Review of Thesis

Thesis are of great significance for thesis writing. In the context of Nepal, no specific studies have been available regarding the Impact of MIS in Microfinance Organization. In order to make this study more comprehensive, however some thesis related to MIS are consulted and reviewed.

Acharya Ishwor (2002) carried out a study on "Implementation of MIS in RNAC- A case study in Marketing Department" Acharya carried out the study with the following objectives:

- To present and analyze existing IS of Marketing Department of RNAC.
- To examine the flow of information to co-ordinate and communication different divisions and units of Marketing Department.
- To provide recommendation on the basis of major findings that has been drawn out in the research study.

Based on the above objectives, Acharya found major findings as follows:-

- Should train and develop the capability of human resource to handle sophisticated equipments regarding information technology.
- Should maintain necessary infrastructure for implementation of MIS in the department.
- The management of RNAC must be committed to strictly implement policies, rules and regulation of RNAC on avoid unnecessary political pressure.
- Implement a Network based computerized information system.

Based on the above findings, Acharya gave the following conclusion:-

The implementation of MIS is necessary for the effectiveness of the department.

- The complex organizational structure and multidivisional structure of the marketing department is ambiguous, it is necessary to make clear.
- The department needs Network based computerized information system to eliminate the drawback generated by paper based information system and traditional way of centralizing the information and authority.
- Need for proper infrastructure for the implementation of MIS in the department.

Lamsal Asim (2003) carried out a study of "Information System Design (A case study of ADB of Nepal" Lamsal carried out the study with the following objectives:-

- The specific objective of the study will be how the information system will help to know the situation of the bank and how helps to the overall performance of the bank.
- To examine practice of maintaining information in different divisions.
- To find out existing information system/ flow of information in different divisions and units.
- To find out drawbacks of existing information system and to provide recommendation for the betterment of the existing system and to design the best suited information system on the basis of findings.

Based on the above objectives, Lamsal found major findings as follows:-

- Modify current practices to match the process in the software.
- Formulate and publish
  - An IT policy
  - Back up and security policy
  - An IT contingency plan, and

- Computer auditing policy and standards.

- MIS divisions should be restricted to have capacity to provide support to branches and other outlets. The divisions should be maintained and staffed to provide installation, training and support services.
- Continuity of system- MIS division lacks the manpower, skills, knowledge and exposure to develop new software products to meet the standards of accuracy, speed and integrity now required.
- Upgrading of MIS system should be in phases as the current immediate required is to install a complete integrated banking system to suit current requirements.
- Improve the management information reports to present comparative information that shows the position at the start of the period under revives the transactions during the period and the closing position.

Based on the above findings, Lamsal gave the following conclusion:-

- Provide the clients with high quality and timely services.
- Access information needed for an efficient and effective corporate management.
- Communicate with other information system (partner banks, customers, statistical office, banking supervision, local and world wide provides of banking and other services 7 information, etc.
- Fully automate repetitive operations and tasks.
- Handle operations and services base on the effective and fast high volume data processing.
- Fully automate repetitive operations and tasks.
- Automate administration of delivered products and services with a sufficient scope of information about clients, products and services.
- Maintain consistency of administrated data and facilities concurrent access from several locations.

- Archive data and documents and keep them accessible.

Bhattarai Ajit (2003) carried out study on “Performance of MIS in Kumari Bank” woth the following objectives:

- To identify factors affecting performance of MIS.
- To examine the existing situation of software personnel of the bank.
- To study the relation of training of end users in the bank for improvement of the performance of MIS.
- To provide suggestions on the basis of the findings.

Based on the above objectives, Bhattarai found major findings as follows:

- Majority of the users of the MIS consider MIS to be important.
- Majority of the user of the MIS considers that helps in decision making.
- Use of MIS in directed towards extraction of current information rather than historical information.
- Further improvement is utilization of MIS needs better communication and training between the various stakeholders.
- MIS users are comfortable using the product and have a good understanding of the system.
- The MIS users moderately satisfied with the MIS.

The factors which will improve the utilization of MIS are “Good Communication channel, “Training to end users,” Training to software personnel”.

2.14 Research Gap

In the past no one had tried to study about MIS is a modern information system consisting network based system and plays vital role in management, decision making and operate day to day organizational activities. Apart from this, this study is done with the objective to define the information and information

system needs and requirements of the different (senior) managers in micro finance sector, make an analysis of the current MIS in JBS, make a gap analysis of the differences in the current and desired situation, and make recommendations about how to improve MIS in JBS using structure, process and outcomes with comparing employee and management perspective.

Researcher has not found any thesis related to Impact of MIS in Microfinance Organization with the above perspective and objectives of the study. There fore, there is a clear gap between present and previous study done on MIS. Further this study will be also helpful to the MIS students who wanted to do a further intensive study about the Impact of MIS in Microfinance Organization.

CHAPTER III

RESEARCH METHODOLOGY

3.1. Introduction

Research methodology describes the method and process applied in the entire aspects of the study focus of data, data gathering instrument and procedure, data tabulating and processing and methods of analysis. Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically. It studies the various steps that are generally adopted by a researcher in studying research problem along with the logic behind them.

3.2. Research design

Laudon and Laudon describe an information system as a socio-technical system. Though they are composed of machines, devices, and physical technology, they require substantial social, organizational, and intellectual investments to make them work properly. Therefore, the focus of this research

has been on more than just software and hardware, but also on the people and the processes around it, it is qualitative research.

This study is mostly descriptive and analytical in nature. So, descriptive research design was used in this study. That is why, this research dealed with more qualitative than the quantitative aspects of the phenomenon.

Figure 3.1: Research Framework

3.3. Procedure of data collection

The researcher has started with qualitative research, which is research that derives data from observation, interviews, or verbal interactions and focuses on the meanings and interpretations of the participants, to find out what the management information requirements are and what the desired situation is according to management. The researcher has gathered this information mainly through unstructured interviews with managers and by working in the MIS department. These requirements just have to be taken for granted. The researcher has found out that management is not aware of the availability of some data. By discussion and interaction, researcher indented to help management defining their requirements.

3.4. Data Processing Technique

The researcher has used a methodology described by Larsson and Malmsjo (1998), called Decision Based Management (DBM) to systematically define the information requirements. Starting with the decision making process required to reach organizational goals. These information requirements also implicate some structural requirements of the MIS itself; the “desired situation”, necessary to deliver upon the requirements.

The next step was an examination of the current management information system. How the management is reports being produced, what is the role of people and systems? The focus was on the one hand on the structure of the MIS and on the other hand on the outcome and the quality of the information/data. This part was mainly gathering information. Interviewing with management what kind of reports they currently receive, and talking to the people who make them to find out how they do it.

The researcher has worked actively together with the people who are responsible for management reporting, and with the IT department. The

researcher was part of the team and was operationally involved in management reporting.

The gap-analysis has been performed using the same models and theories. Comparing the current situation with the desired situation according to the formulated criteria, and defining what kind of improvements are required. With the use of heat maps, the researcher has indicated where the gaps between the requirements and the current situation are the largest. This leads to the following research structure.

For the purpose of assessing current system of MIS, DFD and E-R diagram has been used.

DFD is a diagrammatic representation of the flow of data through a process/system or sub-system/sub-process. It shows what happens to the data as it goes through a process. Like a flowchart, a DFD also uses standard symbols and notation. The use of specific icons associated with elements depends on Gane/Sarson Symbol, which are as follows:

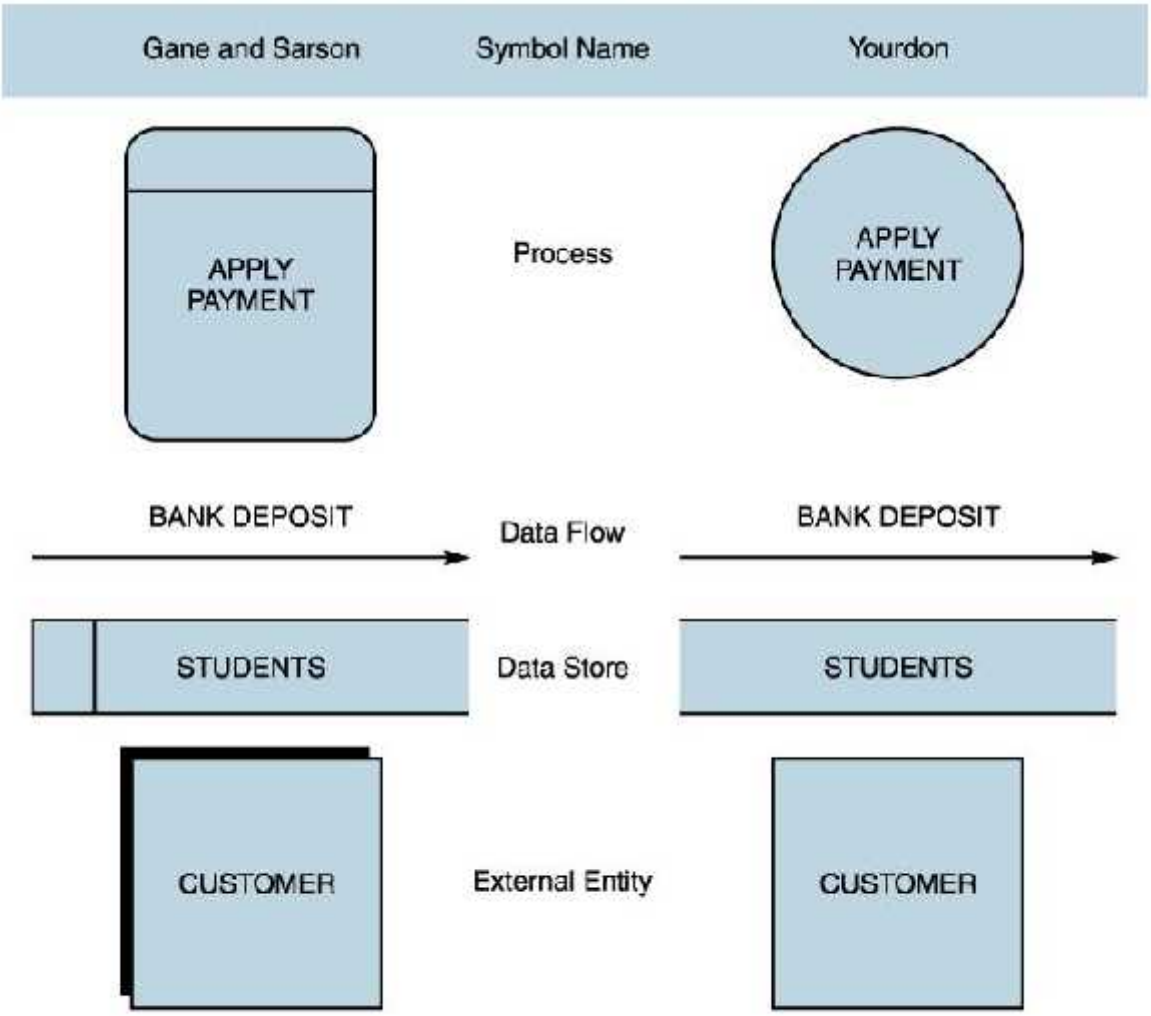


Figure 3.2: Data Flow Diagram

E-R diagram (ERD)

An Entity Relationship Diagram (ERD) is a snapshot of data structures. ERDs show entities in a database and relationships between tables within that database. It is essential to have one of these if to create a

good database design. The patterns help focus on how the database actually works with all of the interactions and data flows;

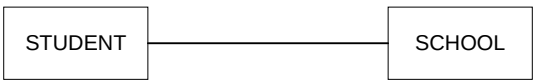
The three main components of an ERD are:

Entities

Entities are concepts within the data model. Each entity is represented by a box within the ERD. Entities are abstract concepts, each representing one or more instances of the concept in question. An entity might be considered a container that holds all of the instances of a particular thing in a system. Entities are equivalent to database tables in a relational database, with each row of the table representing an instance of that entity.

Relationships

Relationships are represented by lines between entities. Relationship lines indicate that each instance of an entity may have a relationship with instances of the connected entity, and vice versa.



Attributes

An attribute is a property or descriptor of an entity

The steps involved in creating an ERD are:

- Identify the entities.
- Determine all significant interactions.
- Analyze the nature of the interactions.
- Draw the ERD.

There are three basic types of E-R diagram

One-to-Many

A one-to-many (1N) is by far the most common relationship type. It consists of either a *one through many* or a *zero through many* notations on one side of a relationship and a *one and only one* or *zero or one* notation on the other.

Many-to-Many

The next most common relationship is a many-to-many (NM). It consists of a zero through many or one through many on both sides of a relationship. This construct only exists in logical data models because databases can't implement the relationship directly.

One-to-One

Probably the least common and most misunderstood relationship is the one-to-one. It consists of a one and only one notation on one side of a relationship and a zero or one on the other.

3.5. Models and theories

Based on the three main research questions, which are the three steps in the process, an outlay for this thesis can be determined. For each of the four steps the researcher has selected some theories and models that have been used as a guidance to complete the steps. Each research question will be answered in chapter four.

3.6. Key Performance Indicators(KPIs)

Key performance indicators are indicators to measure how well an organization is achieving the quantitative objectives and thus their organizational goals. Each department has its own responsibilities and goals that are measurable by KPIs. The KPIs are derived based on discussions with management as well as imposed by head office.

The main KPIs are:

Marketing Products and Sales

1. Total Assets under Administration (AUA)
2. Total Net New Assets
3. Number of Clients / Relationships
4. Total Employees FTE
5. Securities Transactions
6. Sales Contacts

Organization & support (Financial) + RMs + Market managers

1. Number of clients
2. Net New Assets
3. Gross AUA
4. Loans
5. Gross Direct Income
6. R.O.A. (GDI/Gross AUM)
7. Direct Expenses
8. Gross Margin (GDI -/- Direct Expenses)

Credit Opportunity(CRO)

1. Credit Portfolio (by a/c basis)
2. No of borrowing accounts by Facility Types
3. Utilization vs. Limits
4. Overdue Credit Reviews (relationship basis)
5. No. of accounts by Collateral Types
6. AUM of borrowing & non-borrowing accounts
7. Credit income source by facility types (YTD)
8. Credit margin by facility type
9. Credit Portfolio Provisions (Special credits)

These KPIs are quite similar by nature. For MPS and Finance, these KPIs are related to the assets, activity and profitability of clients. For CRO all KPIs are related to loans and collateral. The source data for all this is mainly stored in Olympic and the information can be extracted in a similar way.

CRO (risk)

Risk related decisions are often required on individual client level because the main responsibilities of the risk department are related to extending of credits. Furthermore, extending of credits is bound to authority given by head office and has an impact on the liquidity of the bank. Most decisions are therefore related to the monitoring of the credit portfolio's, collateral, and approval of credit limits.

There is also some general decision making about:

- Targets
- Prognoses
- Country risk related issues.
- Limit excess and collateral shortfall decisions

Research Framework

Overall Research Framework

Figure 3.3: Research Methodology Schemes

CHAPTER-IV

PRESENTATION AND ANALYSIS OF DATA

4.1. Introduction of the sampled organization

Jeevan Bikas Samaj (JBS) is a national level NGO established in 21 September 1997 in order to improve the socio-economic and cultural circumstances of marginalized people. It is a non-partisan, non-political, non-profitable and non-religious organization serving the back warded, disadvantaged and resource poor community. JBS is initiating awareness through advocacy and strengthening the leadership capability of the hitherto excluded and disadvantaged groups. Since last one decade, JBS has been fighting against poverty and unconsciousness. Now it has been providing financial, social, political, educational, health and other various services in three districts of southern-east Nepal. Its major services have been focusing on marginalized people and 62,000 deprived families are taking microfinance services from 33 different branch office of the organization.

To improve livelihood conditions of landless, marginalized and back warded people, JBS is providing microfinance services to the targeted poor people. It has achieved significant outcomes in microfinance service, income generation, women empowerment, community development, human resource development, education, awareness, health and sanitation. JBS is fighting against rural poverty to fulfill its goal to make healthy rural civilization over the period of 13 years since its establishment.

Vision

The vision of JBS is "Poverty free Nepal".

Mission

The mission of JBS is to enhance quality of life of poor people by increasing their access to the resources.

Goal

The goal of JBS is to assist landless, marginalized and back warded people specially women in order to improve their livelihood conditions by providing microfinance service and by implementing community development works.

Objectives

The objectives of JBS are to disburse loan at the grassroots level in order to conduct income-generating activities and to execute education, health and nutrition, sanitation, environment conservation and advocacy programs.

Legal Status and Registered Address

JBS is registered by District Administration Office Morang (Registration No 732/2054), by Social Welfare Council (Affiliation No. 7841) and by Inland Revenue Office Morang (PAN No. 301645869/2061). Similarly, it has been permitted by Nepal Rastra Bank (Central Bank of Nepal) to conduct microfinance services among poor and marginalized households in the society (Permission No. 19/058/2059).

Reward

With the view of recognizing better performing microfinance institutions in Nepal, JBS has awarded by RMDC for its better performance “Exemplary Performance Award” for FY 2006-007. This is the same award, which JBS has won for FY 2004-2005 from RMDC. On the other hand, JBS has won a competitive grant award from the World Bank in 2005, under the scheme ” Launa Aba ta kehi garaun” for implementing a special microfinance program targeting the marginalized and back warded people. Similarly, Microfinance Information Exchange has ranked JBS in top 6-microfinance institution all over

the world on its MIX Global 100 Composite Ranking report 2008 based on outreach, efficiency and transparency. In this report, JBS is only one institution from Nepal that is able to list on TOP 100.

Programs:

Microfinance

JBS has been operating its microfinance program since its establishment. Many of JBS clients who started as ultra poor gradually graduated to micro-entrepreneurs, which is a great achievement of its microfinance program. JBS started microfinance encompassing five southern VDC of Morang district since September 1998 with the credit support from *Gramin Swabalamban Kosh*.

Service of Microfinance

Microfinance has been playing vital role in the field of poverty reduction, therefore, JBS has been implementing the program in three southern east district of Nepal.

Methodology of Microfinance

The program of JBS is inspired by Grameen model. In this model we will conduct a center consisting 2 to 12 groups.In each group of a center there will be 5 members. Jeevan Bikas Samaj's program execution methodology is:

Community Development

Jeevan Bikas Samaj is implementing various development programs beside its microfinance program. Although microfinance program is the backbone of the organization, JBS is operating plus program in the society for community development.

4.2. Organization structure

Figure 4.1: Organization Chart

4.3. Level of Management

The level of management of JBS is divided into three parts. Namely, Top level, who formulate the plans and policy of the organization. Middle level executes the plans and policy by determining action plans and lower level management engaged in a routine job formulated by middle level management.

Figure4.2: Level of Management

4.4. DFD Diagram of the current System:

The following DFD diagram depicts the current system of the JBS.

Figure4.3: Data Flow Diagram of JBS

4.5. E-R Diagram of JBS information system

Customer
Phone
e-mail
Name

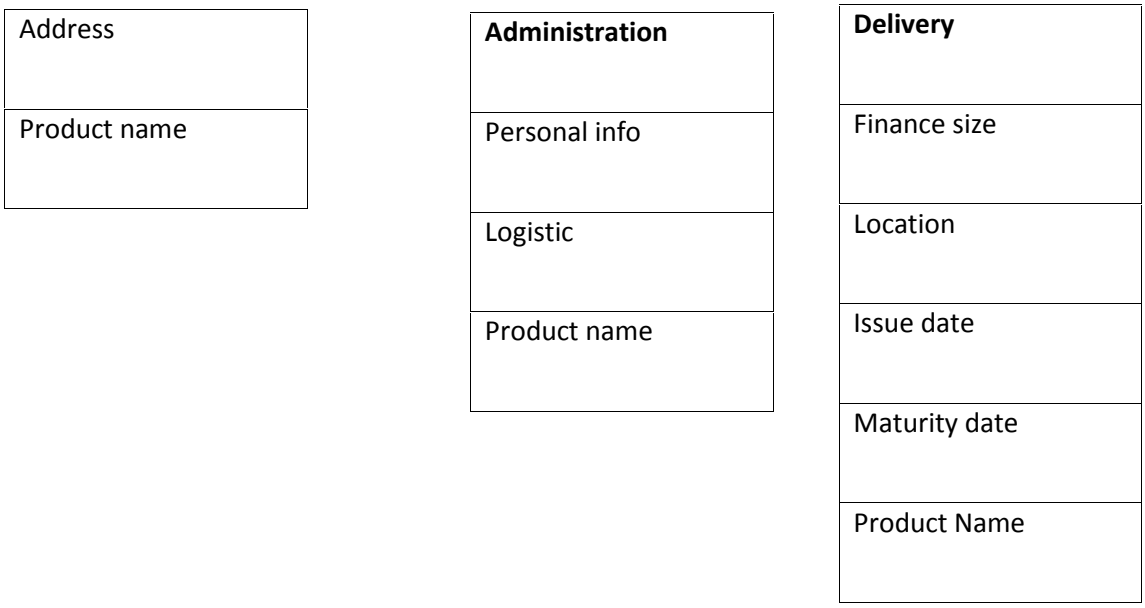


Figure4.4: Entity Relation Diagram of JBS

4.6. System Functions and human perspectives

To meet these data requirements, management information system has to meet certain system technical requirements, which changes human perspectives and benefits the organization. Figure below provides an overview, based on the framework of Cornford et al. (1994) of the desired situation. Each cell contains requirements and possibilities that a good MIS will offer. This table will be the benchmark to evaluate the current situation. In the gap analysis, the differences between the desired and the current situation will be analyzed. This overview has been based on discussions with management, combined with available theory of what a good MIS should be capable of.

Table 4.1: MIS Desire Situation

	System Function	**Hyman perspective (employees)**	**Hyman perspective(management)**

	System Function	Hyman perspective (employees)	Hyman perspective(management)
Structure	Centralized database with data from all TPS(DBMS) BI-Tools Instant access to (historical) data Data mining software	One MIS department support all other departments Main task: management reporting and data analysis Coordination of Branches Use of data instead of creator of data	Consistent reporting process across locations Adaptation of global standards
Process	Automated data Transfer process Query building by IT Staff	Ad-hoc reporting Ensuring data quality Manual input in database Data cleaning Consolidated data from different location Data analysis and interpretation	Daily monitoring of business Real time decision making Management based on hard data instead of interpretation
Outcomes	The data and report should be: Accurate, consistent Complete Valid Timely Accessible	In Depth Analysis of KPIs Data Mining Delivery report within the required timeframe Time to explore new data and reporting opportunities	Better inside in KPIs Time and cost saving Adequate decision making Improve management control system Increase Return on Asset

4.7. The answer to the first research question. What are the management information requirements for senior management?

Management wants to have timely and instant access to various KPIs. The actual data requirements are described in figure below. On a more general level

it is required that Employees spend less time on creating management information and more on using the systems to improve the quality of management information. The required management information needs to be available in a low level of granularity so that in-depth analysis is possible and data can be viewed from different perspectives and dimensions and used for different purposes. Historical data should be instantly accessible. Since manual processes cannot deliver on these requirements, a system-technical solution is necessary, starting with a database that captures information from various systems, which need to be accessible by a BI-tool. All this leads to different human participation in the management information system.

Table 4.2: MIS Required for Senior Manager

Data Requirement	**Period**	**Availability (After Period)**
Daily transaction overview	Daily	Directly after end of period
Overview monthly report	Monthly	As soon as possible
No of new client	Monthly	Directly after end of period
Overview Outstanding Loan	Monthly	Directly after period
Number of total client	Monthly	Directly after period
Number of borrowing client	Monthly	Directly after period
Overdue Loan	Monthly	Directly after period
Consolidated result	Monthly	Directly after period

4.7.1 Current Situation

Looking at the current situation involves looking at the current availability of management information and looking at the current

management information system. The structure of the system, the processes and the outcome. This part has been written based on participative design. As a team member in the finance and MIS department, producing management reports is part of the daily job. Based on those requirements, discussed with the MIS team why these reports are not available, and quite often the reason was that they where not aware of the fact that the required information is indeed currently available in the systems.

4.7.2 Information availability

Figure below shows an overview of which data and reports currently are available, in which dimension, in which timeframe, and how it is produced. (Manual in this context means, raw data being transformed into reports in MS Excel). This overview shows that most of the information/data is currently available, but it also shows that it takes a long time to produce, because of the manual way of creating this management information. This makes the information a lot less valuable. That the information is available does not mean that management also gets it. As briefly described in the introduction, quite some information is available, but people where not aware of it. This directly shows one of the current problems: communication between departments. Management does not know what is available, and IT does not know what management wants to have.

Table 4.3: Overview of data availability

Data Requirement	**Period**	**Availability (After Period)**
Daily transaction overview	Daily	After 1 day

Overview monthly report	Monthly	After 5-10 day
No of new client	Monthly	After 5-10 day
Overview Outstanding Loan	Monthly	After 5-10 day
Number of total client	Monthly	After 5-10 day
Number of borrowing client	Monthly	After 5-10 day
Overdue Loan	Monthly	After 5-10 day
Consolidated result	Monthly	After 5-10 day

4.8. System Functions

System functions can be defined as the raw efficiency of the system itself. In this context, the current System technical part of the MIS is limited.

4.8.1 Structure

What are the real hardware and software characteristics; is the software architecture understandable and robust; does the full set of system components work together in a technical sense?

The heart of operations within a bank is the core banking system. This is the main software that captures all clients' assets, deposits, credits, pricing schemes, processes transactions etc. This can also be defined as the Transaction processing system (TPS). The basic business systems that serve the operational level of the organization (Laudon and Laudon, 2006). JBS has one core banking systems. There is no connection between the systems in the different locations. They all operate independently and separately. Even within a location, the different systems work independently.

Laudon and Laudon define four major types of information systems that correspond to different organizational levels. TPS on the operational level, MIS

and DSS (decision support systems) on the management level and ESS (Executive support systems) on the strategic level. To summarize, JBS only has a TPS, and none of the above mentioned other systems. There is no system that generates reports for management. The management information system within JBS, is people who use MS Excel to transform raw data into management reports.

4.8.2 Process

Is the method by which the system transforms its data, the information processing, correct and valid?

The system technical processing of information in the core banking systems is beyond the scope of this project. As described the only real system technical information transformation is from the core banking system into the DWH. The systems in use do not have reporting functions that meet requirements. There are possibilities to run queries, but this is only being used to generate particular raw data, which is exported to MS Excel and thereafter manually adjusted and transformed into management reports.

4.8.3 Outcome

Are the results relevant, applicable and reliable? Does it meet the requirement specifications?

The system technical results/the output of the system in the current situation is still raw data, that is of no use for management reporting. This causes that requirement in terms of timeliness can never be met in the current situation. Since all current management reporting requires manual involvement, information is not available “on demand”.

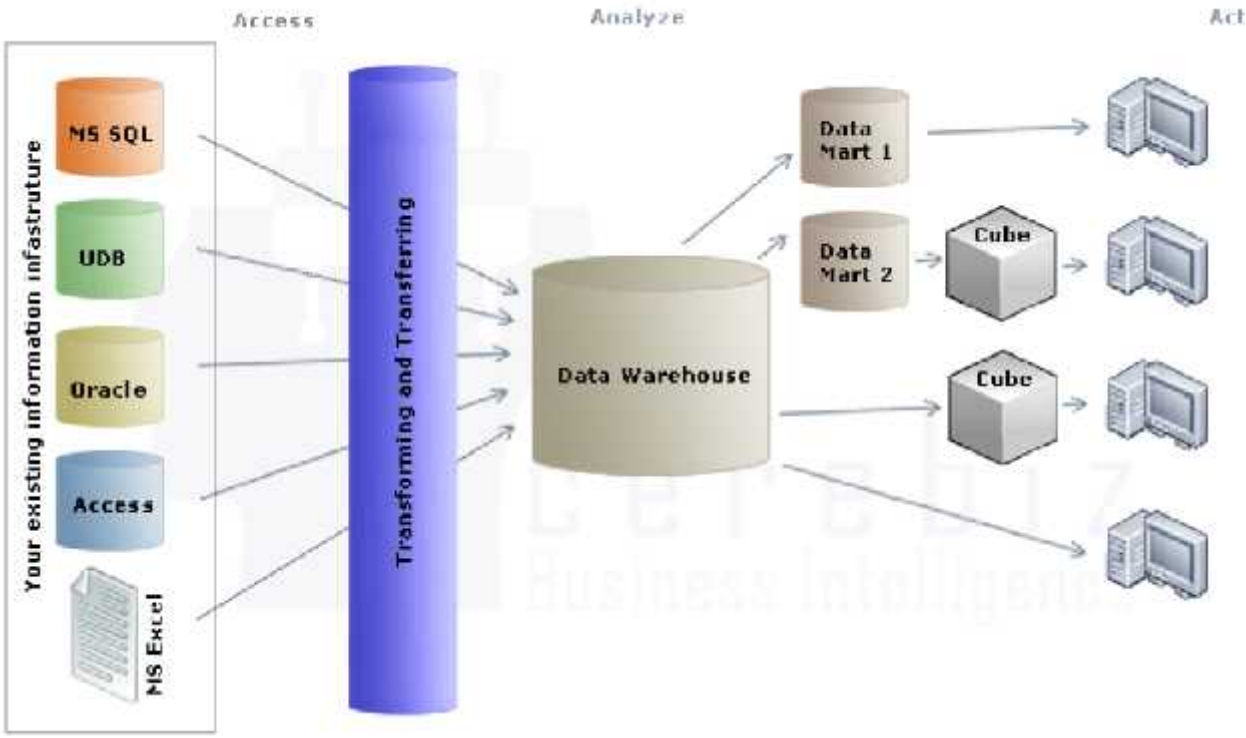


Figure 4.5: Existing System of JBS

4.9 Human perspectives (employees)

The focus is the manual information system as opposed to the computerized information system. The human involvement in the processing of creating management information.

4.9.1 Structure

JBS has an MIS team in all locations. This is part of the organization & support department. The main task of these teams is to prepare management reports about the financial results of their location, and in the regional office for the whole of JBS. Secondly, and currently really time consuming, is the preparation of overviews of the results of all individual RMs. These overviews are used to measure the performance of the RMs, set targets, bonuses etc. and to give the RM an overview of their own results. The MIS department also supports other departments in their information requirements. Currently this does not work efficiently, mainly because of time constraints. Most

departments therefore have their own people making the management reports, which absorb time they cannot spend on their actual tasks.

4.9.2 Process

The human participation starts where the system technical part ends. The process in the MIS department is quite structured. Every month they have to make the same reports and they do that in the same way. Their starting point for these reports is the output of the Excel. This is automatically generated at month end and therefore available on day one of the next month. The outputs are two MS Excel sheets. One with all the clients' holdings, on high level, as of month end and one sheet with all the revenues generated by the clients.

This are MS Excel files with thousands of lines of information spread over about a dozen of columns. As stated before, this information is not complete. The remaining information is provided by people in different departments.

This information is received in the first week of the next month. All this information is transformed into the same format in MS Excel. The raw data does not contain all the information that is needed for the reports. All this is done in MS Excel using "lookup" formulas. An error in a formula, can lead to the whole report being wrong.

After all information is adjusted and manipulated in MS Excel, with the use of pivot tables, the relevant information is being sorted out and transformed into reports. A special note for the individual RM performance reports is that the numbers are put in Excel reports manually.

Every month for all RMs. This only, takes two whole days. This process takes place every month in all locations. Moreover, in the regional office all the results of all locations have to be consolidated. Until all locations have finished this manual process, there is no insight in the exact consolidated results for the

previous month. In general it takes about two weeks for all the reports with the results of the month to be completed. Management reports are based on manual work. Raw data being provided by MIS department and other departments, is manually adjusted in MS Excel and turned into reports

4.9.3 Outcome

The results of all this, are MS Excel based reports given to management in hard copy. All reports are stored in MS Excel sheets on local drives or shared network drives. All historical data is captured in different MS Excel documents. This makes it almost impossible to retrieve historical data, and data is only available in the format where it was made in. Looking at data on a lower granular level is not possible. Schematically it looks like this:

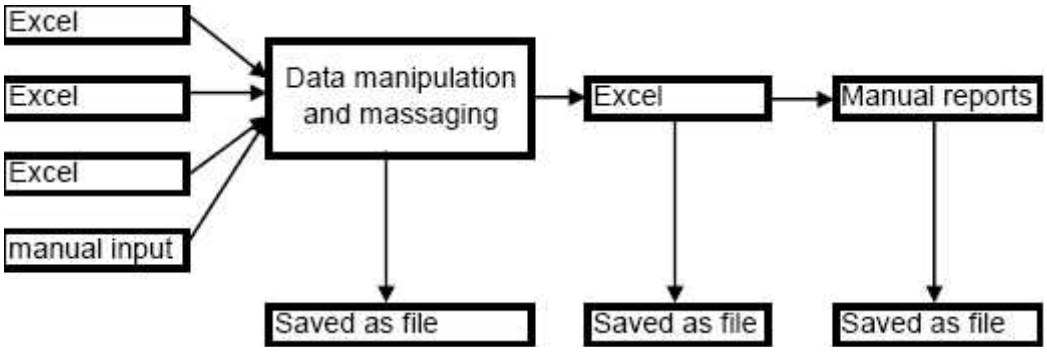


Figure 4.6: Current data processing

4.10 Human perspectives (management)

4.10.1. Structure

Management is depending on information in order to perform their job. Because there is no real system in place to provide this information, every manager has one or more people working for them.

4.10.2 Process

Because of the fact that JBS works in the described way already for many years, the whole organization has adapted itself to this way of working. There

is a certain routine in the processes of providing management information that everyone seems to understand and in the end, accept. The employee turnover within JBS is quite high, so often new employees and managers are hired. All new employees (managerial and operational) are the first couple of weeks to months, extremely surprised by the current way of working. Nevertheless, the effects on a strategic level and on planning, controlling, and decision-making are huge. When there is a certain drop in sales for a product, a large increase in costs, or other exceptions in results, management will notice this after month end. Measures can be taken to adjust the situations, but management will not find out whether the situation has improved after the next monthly report or the one after that. Therefore, it can take up to a month between an abnormality and when it becomes visible, a certain time to solve the problem not able to see the results before another month's end.

4.10.3 Outcome

The outcome for the organization is that management has a hard time controlling results and making adequate decisions to improve the results of the organization. As described in the previous chapter the decision making process starts with "intelligence". Discovering, identifying, and understanding the problems occurring in the organization. This first step is currently the main problem. The lack of (timely) adequate and accurate management information in almost every department within JBS, because of the file environment. There is no real insight in historical data, except for the data that was reported during a previous period. Ad hoc reporting about historical data is extremely time-consuming if not impossible.

4.11 The answer to the second research question. How is the current MIS structured, how does it process data and what is the outcome?

Structure

- Core banking system (Mfin) and some supporting banking systems produce raw data
- Data warehouse implemented but hardly used, no other database in use
- No BI-tools or reporting tools implemented
- MIS team, responsible for management reporting: manual information system
- Data is not instantly available

Process

- (IT) people have to run queries to extract raw data from the Mfin
- MIS Team manually transforms this raw data into management reports
- Because of the times these processes require, MIS team has hardly time to support all management. Most departments therefore have their own people for management reporting.
- All data manipulation is done in MS Excel
- Individual files are stored on (network) drives
- All departments have there own files, often with duplicate data (data redundancy) which leads to data inconsistency

Outcome

- Tens of thousands different MS Excel files stored on hard drives
- Management not getting timely reports which negatively influences decision-making
- Data quality not optimal:

  - Accuracy: complex calculations are sometimes required to allocate revenues to individual clients an RMs. This is too complex to do manually and therefore done in a simplified way which is not always accurate.

- Integrity and Consistency: the structure of data and relationships is not consistent across departments
- Completeness: almost all required data is available but very time-consuming to retrieve
- Timeliness: Data is not instantly available, and not available when needed
- Accessibility: Data is not directly accessible by management, since it is stored as individual files and not stored in a database. Everything has to be requested from employees and they have to provide it to management and locations.

4.12 Gap analysis and improvements

Based on the management requirements and the analysis of the current situation the gap between these two can be determined. A comparison between the required information and the available information has been made. The results are presented in heat maps, where different colors represent the gap. The gap is explained by the structure, process and outcome of the MIS, and solutions to diminish the gap are suggested.

4.12.1 Heat map

Based on the data requirements two heat maps have been made to indicate where the problems are and where the requirements are met. Green indicates that the indicator is available as requested, red means that there is a serious problem. Orange indicates that the current situation is not optimal.

When the data requirement is green, but one of the other indicators is red or orange, it means that the data is currently available, but not in the correct timeframe or dimension. When it takes two weeks to have certain data available while it is needed directly after the end of period, the indicator “availability” will be red. When looking at this heat map, one thing is clear. None of the requirements is met in the required time frame. Most data is available, somewhere and somehow, but only accessible with a lot of effort.

Table 4.4: Heat Map

The reasons for not meeting the data requirements can be analyzed by looking at the management information system. This is a heat map based on the desired situation. As can be seen, every cell is red. This is because of the fact that the desired situation is a DBMS with reporting- and BI tools. This is a big difference with the current file environment where people are the MIS. The structure, process and outcome in the desired situation are completely different from the current situation.

4.12.2 Structure

The gap between the current use of systems and the required use of systems is large. It can be said that no requirements are being met, because there is no computerized information system in use. As can be seen in the first heat map, the main problem is the time it takes to get the required data, which is much longer than required. Most data is available in one way or another, but it takes a

lot of time and effort to obtain it. This is obviously because of the large share of human participation in the process of management reporting. With a system technical solution, many of these problems can be solved.

A business intelligence or reporting tool should be used. Such a tool is useful when linked to an application or database that contains all relevant data. A common saying in the computer science is “garbage in, garbage out”. Therefore, it is important to start at the basis.

The management information system obtains its information from the organizational TPS. In this case, the core banking system and the supporting systems described before. A solution need to be find to handle the data output of the TPS and to make sure the required data is available for management decision making when needed. The current file environment therefore needs to shift towards a database management system (DBMS). Database technology can cut through many of the problems that the current file system has.

A database centralizes the data and controls redundant data. Rather than storing data in separate files for each application, data are stored as to appear to users as being stored in only one location. When making use of a database instead of files for data storage, it will be much easier to get access to historical data, and ad hoc reporting can be done much faster. Since a data warehouse is already implemented, the most logical solution for the current drawbacks is to start using it.

Research shows that the main reasons for implementing a MIS are:
- Having better access to information
- Better and more accurate information
- Single source of data

That the Data warehouse is not being used is rather strange, because it could solve most of the problems JBS currently has. In other locations, JBS makes extensive and successful use of the DWH, and BI-tools. It meets most requirements of the finance department. These cockpit reports would enable management to get an instant insight in the financial performance on all required levels. Moreover, it can replace the time consuming manual process of producing the RM performance

4.12.3 Process

When making full use of the possibilities of the DWH, the system technical processes would change materially. Most work currently done by regular staff will be taken over by IT-staff and system technical procedures. The data manipulation and manual input will need to take place before the data goes into the DWH. This not only will result in “one version of the truth” but also that the complete and usable data is stored in one location. When all data is stored in the DWH, all kinds of queries can be run to extract the data in every required dimension.

This DWH can capture most of the (historical) data required by management. As done in other locations, the DWH can be customized to the requirements of the location.
The database needs to be maintained and kept up-to date by IT personal.

Figure 4.7: Purpose data processing

4.12.4 Conclusions

Using the DWH will solve many of the existing problems and drawbacks. As proven by the successful use of the DWH in other locations of JBS, the DWH does have many benefits. Since the blueprint of the DWH is the same in different locations, same results could be achieved.

4.13 Solutions/implementation

The solutions required to solve the current issues will be described with the use of MoSCoW. This is to define what is absolutely necessary, what is required and what the ideal situation will be.

M – Must have

1. No matter what kind of other systems, BI-tools or other software will be implemented, the basis needs to be a database. This can be as simple as an MS Access database, or as complicated as a full data warehouse. All End-data needs to be stored in the database (or multiple). Historical data will be easy accessible, which allows comparison, trend analysis and progress tracking. The best short term solution is MS Access, because it is relatively easy to develop.
2. Data needs to be stored in the lowest level available. Most management information is presented are on a high level (the more senior the manager the higher the level). Most of the time the end-data is stored in the same high level. For analysis purposes, or exception reporting, there needs to be a possibility to drill down to the lowest level. Moreover, in a relational database, the highest level can easily be built up from the lowest level.
3. To prevent data redundancy and inconsistency all data needs to be centrally stored and maintained by the MIS team. Current management reporting by people from other departments needs to be taken over. This also prevents duplicate work and thus waste of time. Moreover, the reliability of the data will increase when an independent team reports them, rather then people whose performance is measured based on the data, they themselves provide.

S – Should have

4. To make data instantly accessible for management a BI-tool with front end user interface needs to be linked to the database. Instead of multiple hardcopy reports for different dimensions, the manager can select its own view that suits his needs.
5. The regional office also needs detailed insights in the data from other locations. Since the core banking system is different this will require

some more effort. This therefore is a next step, after implementation of the recommendations mentioned before. The data should be stored in the same database.

C – Could have

6. The data warehouse is already in place, but as described before, not being used the way it should be used. Based on the experience of other locations and the fact that the DWH in Online availability of multiple real time reports. This is only usefull when the DWH captures all end-data, because otherwise the reports will not be complete. After the upgrade of DWH these cockpit reports and more can be implemented.

W - WON'T have this time but WOULD like in the future.

7. Basically all of the above mentioned recommendations but then with a central DWH that captures information from all locations in Nepal.

4.14 To answer the third research question: What is the gap between the current and the desired situation?

The main gap is the timely availability of management information, which is caused by the lack of automation. There is too much manual involvement required in the process of management reporting. The different TPS are not linked to the DWH, which therefore loses its function. Instead of Excel files, data needs to be stored in a central database. A database can be linked to BI-tools, to make data-analysis easier and to provide management with a tool to access data from their own desktop.

CHAPTER -V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. Summary

Information, which is essence is the analysis and synthesis of data, is undoubtedly one of the most vital corporate resource. It is structured into models for planning and decision-making. Information is incorporated into measurements of performance and profitability. It is integrated into product design and safety methods. In other words, information almost recognized and treated as an asset in a modern organization.

The present research started with the objectives to define the information and information system needs and requirements of the different (senior) managers, make an analysis of the current MIS, make a gap analysis of the differences in the current and desired situation, and Make recommendations about how to improve MIS. The DBM model has been used to get the objectives. The DBM model reflected that the current system is far away from the DBM model.

The main gap is the timely availability of management information, which is caused by the lack of automation. There is too much manual involvement required in the process of management reporting. The different TPS are not linked to the DWH, which therefore loses its function. Instead of Excel files, data needs to be stored in a central database. A database can be linked to BI-tools, to make data-analysis easier and to provide management with a tool to access data from their own desktop.

5.2. Conclusions

This research started with the following research question:

What are the **problems** with the **current management information system** and how can these be **solved** to meet the **information requirements**?

The question can be broken up in three parts:

- Information requirements

- (Problems with) current management information system

- Solutions

Management information requirements.

Management information provides insights in various KPIs, which are necessary tools for management to support planning, controlling and decision-making, which in its turn, supports reaching the goals.

The management information requirements can best be summarized as the need for timely insights in various KPIs. The information has to be accurate and complete and needs to be available in different dimensions in order to capture all aspects of the business. The different senior managers of the various departments have different KPIs and therefore different end-requirements. The basic though, is quite similar. Almost everything required evolves around three main KPIs. AUM, Revenue and NNA. The different managers only look at it from different dimensions. Market dimension, booking center, RM, Individual products, margin etc.

Current management information system

The current MIS consist of people who manually transform raw data into management reports. The core banking system (Mfin) and some supporting banking systems produce raw data. Al this data is collected by the MIS team and manually transferred into MS Excel based static reports that are distributed to management and to the RMs in hardcopy (paper).

The current situation can be described as a traditional file environment. Every department develops and maintains its own files. The resulting problems are data redundancy and inconsistency, program-data dependence inflexibility, poor data security, and an inability to share data among applications. Data is not stored into a database; retrieving historical data is therefore extremely time consuming and certainly not instantly accessible or available.

The largest problems with the current MIS are the time it takes to produce reports and the fact that reports are static which limits management in in-depth and historical analysis.

Solutions

The solution for many of the current problems is actually quite simple and logical. When the DWH is used the way it was meant to be used, combined with a user-friendly BI tool, end user current and historical data will be instantly available to management. There is global support for the DWH from out of The Netherlands, where they have a fully operating DWH, with BI-tools that make data instantly accessible. Job-redesign will be required, because the tasks of MIS people will change.

This solution sounds simple, but it does require certain investments and considerable time and support from the global DWH team. A much easier solution, but with already a large impact will be a simple database management system. The correct use of MS Access databases results at least in historical data being instantly available. Simple user interfaces can be created, and queries can be custom built by various users without to much training.

5.3. Recommendations

The main recommendation is to implement the solutions. The following recommendation to be taken for a short term, and longer term solutions.

Short term

Transformation from file environment to DBMS

1. Set up a project team to coordinate the whole transformation from the current file environment to the DBMS. Since the MIS team has the best knowledge of the current processes, they can best fulfill this role.
2. Define all the data requirements from different management. This report can be used as a basis.
3. Store historical data in the database on the lowest level available.
4. Define and built the relational tables. Currency tables, client information tables, RM tables (to link RMs to teams and markets), product tables (to group products) etc.
5. Built custom reports, queries and forms that can be easily used by MIS people for their current reporting.
6. Do parallel runs with the current reporting process to ensure data quality. Once the output of the database is the same as with the current processes, the current processes can be dropped.
7. Going forward, feed in the weekly and monthly data in the database and send out the reports.

Medium term

Bi-tools

1. Evaluate BI-tools on the market by inviting different vendors for a presentation of their products. (This can start while building the database)
2. Once a decision for a tool has been made, work together with them to specify the requirements. Senior management needs to be able to access the tool from their desktop to see their required information and the MIS team needs to be able to work with it on a daily basis.

3. The BI-tools needs to be linked to the access database. The MIS team will feed the data into Access. Their current processes of data massaging will remain the same, but instead of storing it in MS Excel, it will be stored in the database, and the reporting will be taken over by the BI-Tool.

Long term

Fully operational DWH

Once previous interim solutions are implemented the possibilities for the DWH need to be explored. This is the part that requires some additional exploration, to exactly find out what the capabilities of the DWH are.

The global DWH team is responsible for the implementation of the DWH and they need to work together with local IT to make the DWH fully operational. As explained, the basics are there, but it looked like they stopped halfway the project. All supporting systems need to be linked to the DWH. The whole process of data collecting from these systems can than be automated. Complex calculations and allocations can accurately being performed by the DWH. Manual input into the DWH should be available, as long as the end-data is fully captured in the DWH. All this is already possible in multiple other locations. This will not only save a lot of time, but it will also improve the accuracy.

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