

REDESIGNING GOVERNANCE

The Relevance of Management Information System
in Municipal Bodies

Dr. Ravikant Joshi



Foreword

The Right to Information (RTI) movement is gathering momentum in India on a variety of fronts, and the passage of new legislation at the national level will lend this more fuel.

As various stakeholders now look to use such instruments at the grassroots, the specific nuances of RTI will become more clearly evident. While RTI is a large concept, and the specific legislative victories ensure the availability of specific information, these instruments mark only the beginning of a large evolution in the creation and management of information for decision-making.

At a more evolved level, more instruments are needed to understand the proper functioning of public institutions, specifically cities and towns. It is not practical to invoke RTI legislation every time to procure information on, say, how much money was spent on every road or infrastructure project, or solid-waste management bill, or street lighting contract, in each ward or neighbourhood of the city; the sheer volume of the information and the complexity of the procurement process will demand a different way to procure and use “information”.

This evolution in the creation and use of information will result in another demand for “disclosure”, the mandatory release of information by local bodies to their stakeholders. Information by itself is useful, but it needs to have additional characteristics to become truly powerful as a consistent instrument of change. What disclosure does is to give information four such characteristics:

1. **TIMELY:** it makes such information timely, relevant to the current functioning of the municipality, rather than like reading yesterday’s newspaper.
2. **COMPREHENSIVE:** There must be a minimum set of information to understand the full context of the institution. Getting to know property tax information without knowing how that money is being used is not fully useful to stakeholders
3. **PREDICTABLE:** The dissemination of the information is expected, on a regular basis (every quarter, or 3 months, for example). This predictability is what prepares stakeholders to anticipate the data, build capacities and skills to interpret the information, and create change through the sustained use of such information
4. **STANDARDISED:** It is possible to confuse and flummox even experts with information overload. In order to make sense of information, it needs to be packaged in a standardised, generally-accepted format.

When information has these characteristics – and all four – it results in the explosion of interest among stakeholders: administration, elected representatives, citizens, NGOs, lenders, rating agencies etc. A fifth characteristic can also be added: **CREDIBLE.** Disclosure should ensure that the information being provided is trustworthy.

Disclosure, as defined by the systems that lend **INFORMATION** all the above characteristics, then becomes the basis for decision-making in the organisation. And decision-making is at the root of **GOVERNANCE:** good quality-decisions cannot be made without good-quality information; what cannot be measured cannot be managed.

Eventually, the two instruments of RTI and Disclosure should co-exist: the first, to be used as a scalpel to extract specific bits of information at great depth, and the second, to provide a steady rhythm of performance information.

For an Urban Local Body, generating this kind of information is difficult, especially on a sustained basis. This requires fundamental internal organisational transformation, almost like re-doing the plumbing of information flow. There is often internal resistance; this is invariably caused not because of vested interests (there is plenty of this), but more because people have not functioned in this manner of using information before.

This is where the work that Dr Ravikant Joshi has done comes in. Over the past several years, he has been a relentless voice for the proper set-up of accounting and budgeting systems in municipalities, which are like the sump tank and motor room for the information plumbing within an organisation.

Dr Joshi's latest book takes a different approach: rather than look at the complex internal changes that are required to do accounting reforms, he has looked at information from a user-perspective. This book is aimed at orienting various stakeholders towards standardised formats to understand information, through the use of Management Information Systems (MIS) reports.

By beginning with the overall context of MIS, and its relevance to decision-making, Dr Joshi sets the stage for the more detailed and specific discussion on the types of reports that could be used by departments within a municipality.

The book has value for a range of stakeholders: within municipalities, at different levels of the organisation, to begin to see the value of correctly-structured information for decision-making; among civil society stakeholders, to see how information demands could be organised, so that more meaningful debate could take place in public forums; for change consultants, who could use the book to understand the organisational and internal process changes that are required to generate information in such formats; and many others as well.

The book is meant, I am sure, as a kick-off point. It is meant to open the envelope towards a deeper and richer use of information for decision-making in municipalities. The formats that have been prescribed could be used as a starting point, and modified based on local conditions. The pressure to generate such information will itself create change within municipalities, and trigger off other positive outcomes.

The book demonstrates the deep experience of the author and commitment to providing a range of possibilities that could act as footholds to move us collectively towards better governance through better information dissemination

This book is meant to be used by many. The best tribute to it would be for it to do geared, pencil-marked, shared.

Ramesh Ramanathan

Preface

The 21st century is aspiring and promising to be the century of knowledge, century of world wide urbanisation, century of modern city states etc. But whether it will become the century of good governance coupled with participative democracy or not will depend on information becoming available to people at large and they learn to manage it constructively. Information is a stimulant for public action; it acts as a catalyst in ensuring accountability, transparency, contestability, efficiency and peoples' participation. The common lacuna observed regarding failure of 'state' or 'market' to serve people is lack or asymmetrical availability of information. There is a worldwide movement to overcome information asymmetries. In India, also we observe civil movement for right to information and disclosure laws and 'States' reciprocal efforts.

Information must exist before one tries to overcome the problems of information asymmetry or tries to exercise right to information, but in Indian municipal bodies the information management system has been non-existent throughout the pre- and post- independence period. Information is even not available to municipal decision makers.

In recent years, several municipal bodies have taken initiative to introduce management information systems. However, such initiatives have remained confined to few metropolitan cities and holistic information management has not emerged in these municipal bodies. The lack of literature and research regarding managing information in municipal bodies is one of the reasons. This hand book is an attempt to fill this void.

This hand book is based on first-hand experience and thus a ready-to-use tool for Municipal Chief to create, implement and run management information system in their municipal bodies. It explains what basic minimum information should exist in a municipal body and in what format it should exist. This book is also written with an objective to help urban activists and common men at large who find it difficult to get any sort of information from a municipal body. It is hoped that it will help them to understand what types of information can exist in a municipal body and how it can be retrieved. It is hoped that this book will stimulate others to write on this subject to address the growing demand arising from widespread implementation of right to information/disclosure laws.

I am grateful to Ms. Lysa John and Ms. Micha van Wilderen of YUVA for not only making this book possible but also for editing this book competently. I also thank YUVA for publishing and the Ford Foundation for funding this book. Ms. Amita Samant is also due for credit for conducting case study of New Mumbai Municipal Corporation and helping me in earlier stages of book. I am thankful to Vadodara and Navi Mumbai Municipal Corporation and their officers for their views and assistance and allowing to use their existing MIS formats with suitable changes. I would like to acknowledge my former colleagues at VMC Mrs. Kokila Shah and Mr. Amit Thorat for their assistance in preparation of this book. My final thanks belong to Sanjit Narvekar and his team. This is the third book in row of mine to which Sanjit has given a beautiful and elegant body.

Ravikant Joshi

Vadodara – May 2005

List of Abbreviations

AMC	Assistant Municipal Commissioner
CBOs	Community Based Organisations
CIDCO	City and Industrial Development Corporation
DMC	Deputy Municipal Commissioner
EDP	Electronic Data Processing
GDP	Gross Domestic Product
GEMS	Generating Economic Momentum Settlements
GIS	Geographical Information System
HOD	Head of Department
HOO	Head of Office
ICT	Information and Communication Technologies
IS	Information Systems
JAD	Joint Application Development
LAN	Local Area Network
MIDC	Maharashtra Industrial Development Corporation
MGD	Million Gallons per Day
MIS	Management Information System
MJP	Maharashtra Jeevan Vikas Pradhikaran
MLD	Million Litters per Day
MOH	Medical Officer of Health
MSEB	Maharashtra State Electricity Board
NGOs	Non Governmental Organisations
NMMC	Navi Mumbai Municipal Corporation
NMMT	Navi Mumbai Municipal Transport
RAD	Rapid Application Development
SC	Schedule Caste
SDLC	System Development Life Cycle
ST	Schedule Tribe
ULBs	Urban Local Bodies
VED	Vital, Essential, and Desirable
VMC	Vadodara Municipal Corporation

List of Figures

Figure 1.1	Effective Communication
Figure 1.2	Symbiosis
Figure 2.1	Relationship between Operations, Planning and Control
Figure 2.2	Traditional Framework
Figure 2.3	Framework of Robert Anthony
Figure 2.4	Conversion from Data into Information
Figure 2.5	Life Cycle of Data
Figure 2.6	Hierarchy of Systems
Figure 2.7	Interaction of Management Levels
Figure 2.8	Information Flow in a Functional Unit
Figure 2.9	Communication Flow
Figure 2.10	Formal and Informal Components of MIS
Figure 3.1	Legal & Administrative Framework
Figure 3.2	Governmental Structure
Figure 4.1	System Development Process
Figure 4.2	Top-Down & Bottom-Up Design - Relationship
Figure 4.3	Prototyping
Figure 4.4	Collaborative Development Technologies
Figure 4.5	Object-Orientated Development; Property Tax Account
Figure 4.6	End-User Development
Figure 4.7	Different Design Methodologies – Comparison
Figure 4.8	Roles Classified into Types of Jobs
Figure 4.9	Summary of Benefits of Centralisation and Decentralisation
Figure 6.1	MIS Life Cycle

List of Tables

Table 2.1	Planning and Control Activities
Table 2.2	Information Characteristics
Table 2.3	Job Content of Management Levels

Chapter 1

Introduction to Municipal Management Information Systems

INDEX

<i>Growing Importance of Information</i> _____	9
<i>Growing Importance of Management Information Systems</i> _____	10
<i>Why Information Management in Municipal Bodies?</i> _____	10
1. Urban Growth & Declining Urban Productivity _____	11
2. Changing Role of Municipal Government _____	11
3. Changing Attitude towards Urbanisation _____	12
4. Changing Philosophy _____	14
<i>Information Management in Municipal Bodies</i> _____	15
1. Lack of Research, Literature & Data _____	15
2. Lack of Secondary Data _____	16
<i>Manual on Municipal Management Information System</i> _____	17
<i>Objective and Scope of Manual</i> _____	17
<i>Contents of Manual</i> _____	17

1

Introduction to Municipal Management Information Systems

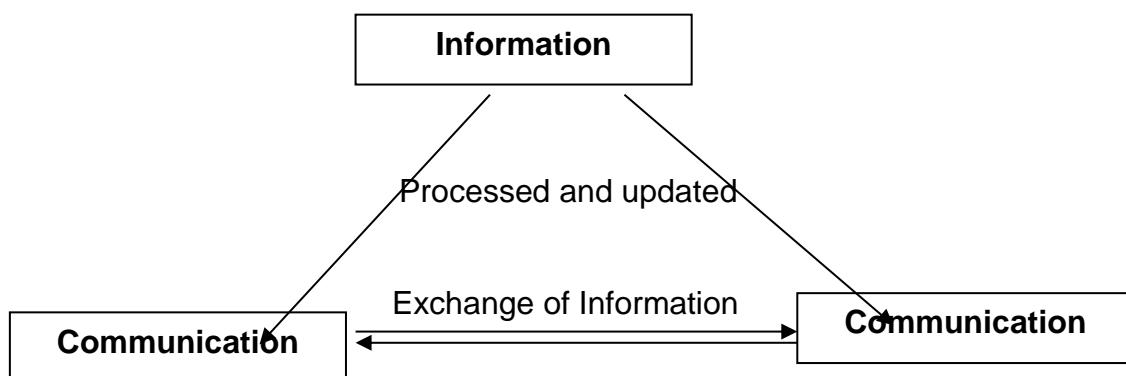
Growing Importance of Information

Information is indispensable for everyone: in both personal and professional life. From a professional point of view, information is needed in all kinds of contexts and sectors such as health care, industry, commerce, banking, education and politics.

The growth of information has been enormous in the past decades and one could speak of an exponential growth, which likewise increases the importance of information and explains why a significant part of one's personal and working time is spent on searching, collecting, recording and retrieving information.

Any kind of information is a fundamental resource and therefore needs to be collected and stored properly. As it is always changing, it needs to be updated continuously. In order to exploit the available information to the utmost when needed the processing of information is essential. Correct information processing will lead to good and efficient communication. A good communication network at its turn allows an extremely useful exchange of information.

Figure 1.1 – Effective Communication



The formal system that performs all these tasks and manages the information, is called a Management Information System (MIS).

Growing Importance of Management Information Systems

Information and MIS thus have become a subject of great interest to any organised activity or organisation. The two main reasons are:

- **Structural Complexity of Organisations**

The internal and external structure of organisations is becoming more and more complex. Consequently, information and information exchange play a vital role in holding together and coordinating any organisation. Good communication between the various departments is of fundamental importance for the success of the organisation's activities. Management teams have only recently been paying explicit attention to and recognising the importance of information processes. In fact, a MIS is very similar to the nervous system. Evolution urges the nervous system to grow and change accordingly; a must for survival.

- **Computer Technology**

The increasing use of computers has a direct influence on the growing importance of Management Information Systems. Computers are able to both access and record information and perform calculations at an extremely high speed. Before, computers could access information at a rate of 20,000 characters per second from a magnetic tape, which corresponds to reading and writing 400 pages per minute; they could do around 50,000 multiplications per second. New models, however, can not only process much more information in less time, but the costs of information processing are remarkably lower. It was the extremely fast developing computer technology that challenged the management environment to use computers at a larger scale and for different purposes.

Traditionally, the board of an organisation had to manage four types of resources: human resources, finances, goods and assets. Nowadays, they must add also 'information' to this list. In fact, some researchers in management have defined a manager as a 'translator' or 'transducer', transforming information into decisions.

Why Information Management in Municipal Bodies?

Information, the fifth resource, needs to be managed efficiently in order to ensure the existence and growth of an organisation. It is one of the main pillars of globalisation and of the emerging New World order. The revolution of the computer technology allows us to organise the increasing quantity of information in Management Information Systems. Since information covers every single aspect of life, municipal bodies cannot be an exception. The introduction of Management Information Systems at municipal bodies has become highly relevant and, even more, very urgent because of the three following reasons:

- **Higher Quality of Urban Life**

Any municipal management has to deal with large quantities of information. Whether a municipal body takes the right decision strongly depends on the organisation and management of all this information. They are responsible and

their decisions directly affect urban life. It is the quality of their work that determines the quality and improvement of urban life.

- **Performance Evaluation**

Management Information Systems allow a municipal management to follow up with the functioning of their staff. Proper organisation of information and good internal communication networks make the evaluation of their performance possible.

- **Access to Information**

On a micro-level, appropriate Management Information Systems within a municipal body make it possible for everyone to have access to any kind of information, giving space for social auditing.

At a larger perspective, information management is of extreme importance and relevance for the entire nation. The next four changes will elaborate this statement.

1. Urban Growth & Declining Urban Productivity

In India more than 30 percent of the population - this equals more than 300 million people - lives in urban areas. Nevertheless, the urban population and thus the population density keep on increasing continuously. Cities are daily facing the consequences of this urban explosion.

The quality of urban life is getting lower because of the decline in urban productivity. As yet this decline has not been as substantial to affect the economic growth. But it will become an important impediment to the country's economic growth now that the contribution of the urban sector to the national economy (Gross Domestic Product GDP) has reached 60 percent and the Indian economy is progressing very fast.

It is up to the municipal governments to deal with this urban growth. However, they are having many difficulties to cope with the ever-increasing demand for civic infrastructure and services.

Transforming this declining trend in urban productivity into an increase, and thus ensuring a higher quality of urban life, largely depends on efficient urban management. Management Information Systems will be the key to taking the right decisions.

2. Changing Role of Municipal Government

The role of a municipal government comprises all aspects related to urban life and urban society. Regardless of their broad range of activities, our State Government did not provide municipal bodies with modern means to successfully fulfil their duty.

While the formal role of the municipal government is getting smaller, informally their role is expanding. This change is taking place at two levels: at a conceptual or ideological level, and an operational or functional level.

Today's fast developing science and technology change the people's view on the minimum amenities for acceptable living standards and it is the municipal governments who have to deal with their higher expectations. Initially, the main task of a municipal government was to regulate and control. Nowadays, they are seen as an instrument of economical and social change. Individual municipal governments in a state and in the country are no longer seen as opposing bodies; coordination and cooperation are considered to be the keys to satisfactory developments, like improvement in the service sector. Conceptually or ideologically speaking, municipal governments are losing their classical local autonomy and becoming more dependent on a higher level of government.

At an operational or functional level the tasks of the municipal government have increased both qualitatively and quantitatively. They have shifted from mere regulation and maintenance to:

- Provision of civic services
- Regulation of activities as per various laws
- Mobilisation of resources
- Protection of environment
- The agency role: implementation of government programs
- The development role: active assistance to higher-level government in an equitable distribution and delivery strategy; spurring of economic development
- The welfare role: social transformation
- Popular participation

Even though this manifold expansion did not coincide with the needed adequate changes in legislation or with the devolution of resources at a higher level, municipal governments did become the agents who determine the quality of urban life, which emphasises the need for efficient information management.

3. Changing Attitude towards Urbanisation

The attitude of the Government of India towards problems concerning urban growth or urbanisation is changing. Until 1991, the government with all its State Governments followed anti-urbanisation, anti-migration and anti-municipal governance policies. Because of the dominant and imposing 'state' philosophy, centralised planning and excessive control in this pre-reforms era, urbanisation was considered to be an unavoidable menace and taboo.

In the post-reforms era the problems that large cities encounter are being viewed as the result of an inability to find efficient ways to manage and finance urban growth. The solution lies in finding a better way to deal with the problem. Instead of trying to stop the migration, urban growth and urbanisation are being

viewed as an essential ingredient for economic growth:

- High productivity in agglomerations
- Cosmopolitans and good educational systems cater for more potential human resources
- Increase in taxable capacity mobilises additional public resources
- Advantages of large investments in infrastructure

The National Commission on Urbanisation (1988) was the official group to hold similar views and it propounded the concept of Generating Economic Momentum (GEMS). Their recommendations were to develop large cities, without locating new industries in backward areas.

The government was facing serious problems because of their anti-urbanisation policy. They could not keep on neglecting urban cities by leaving them to the mercy of archaic and inefficient municipal bodies. The government started to realise the positive influence of urban growth on economic development: that structural and economic reforms and macro-economic policies through a market-based economy are less likely to be successful with the existing urban development and its infrastructure. Improving the infrastructure and urban administration would stimulate the urban productivity, accelerating the economic development and thus the level and quality of urban life. In order to achieve this, municipal bodies needed to change internally.

It is clear that it took the government many years to change their approach. Two decades passed from the formation of the National Commission on Urbanisation to the erroneous 64th and 65th Constitutional Amendments, the implementation of the 73rd and 74th Constitutional Amendments, the formation of State Finance Commissions by State Governments and the 10th Finance Commission's recommendation that the central government should share its responsibility of urban development.

India's increasing population and economic contribution force the government to prioritise the phenomenon of urbanisation. Nevertheless, considering the macro-economic compulsions the Government of India and State Governments are facing, it is unlikely that the budgetary allocation for urban development will increase (see India Infrastructure Report).

The government is expected to undertake the following action plan, making good Management Information Systems in municipal bodies essential:

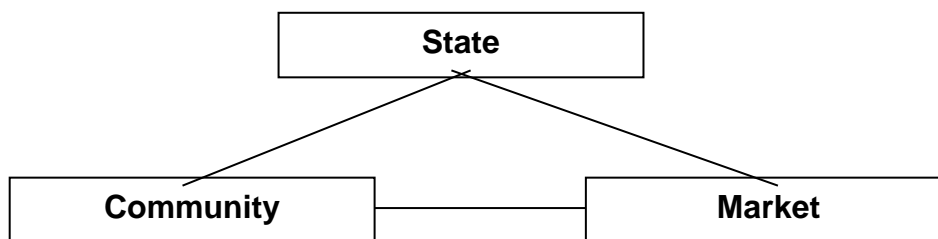
- Improving municipal bodies structurally and upgrading non-budgetary, non-monetary measures
- Improving urban services and its infrastructure, abolishing monopolies and giving more concessions

4. Changing Philosophy

Globally, the philosophy of governance is changing. The government's role of being a 'provider' and 'controller' is more and more becoming a 'facilitator' and 'regulator'. The aims of structural reforms are that market forces take over the role of 'provider', to prevent excessive government control and centralised planning and to lighten the burden of the government. In order to achieve the first aim, 'the state' is increasingly facilitating 'the market'. However, neither the 'state' nor the 'market' is auto-sufficient and thus capable of creating an efficient and equitable society, offering sustainable development to urban areas.

There needs to be a symbiosis between the complementary entities of the three systems: state, market and people. For ages the people's participation - a fundamental element to create a fair, equitable and just society - has been neglected or insignificant, whereas today it has become absolutely necessary. The National Commission on Urbanisation remarked that "people's participation in the context of the present day urban reality is no longer a 'liberal ideal': it is a compelling necessity".

Figure 1.2 – Symbiosis



Active participation of the community - as an alternative to the unsustainable capital market system and the inefficient state command system, or as a safety-net to guard common people at large against the excesses of 'state' and 'market' forces - seems to be philosophically, conceptually and strategically soundly-based. Until the nineties, however, the state had not shown any effort to involve people in the nation's building process, including urban development and management processes, or to offer them incentives in finding their own solutions for local problems. For the first time - in 1992 - the Constitution Act (74th Amendment) recognised that governance could no longer remain solely the prerogative of governments. There were many reasons for the introduction of this act. Cities proved to be ungovernable with their traditional structures and mechanisms. They were growing and the complexity of problems needed attention. A collaborative and participative effort was needed: the government with non-governmental bodies, a fusion of public and private initiatives, allowing citizens to have a hand in governance issues. Unfortunately, no progress was made in the last seven to eight years; states did not act conform the new legislation. The Constitution Act appeared to be ambiguous about people's participation, not sufficiently emphasising their need and the institutional mechanisms, not clearly defining the required kind of interface between municipal bodies and citizens or how to participate

successfully. There was a lack of state activism, but equally unfortunate was the community's apathy and docility: all kind of local leaders, non governmental organisation's (NGOs), community based organisation's (CBOs) or common citizens never tried to get involved. The concept of 'self-help' did not exist in the society.

Except for the 73rd and 74th Constitution Act, there were no planned efforts from the state to involve the community in the nation's building activity in the post-reforms era (i.e. after 1991). Nevertheless, there has been a sudden increase in people's participation, albeit highly unorganised and informal, achieving miraculous results. Another complementary and heartening trend one can observe is that NGO's, CBO's and various other non-formal groups are becoming highly vocal and active. They are rightfully demanding participation in the governance or decision-making process to ensure transparency, accountability and equity. Only proper information management in municipal bodies are able to guarantee this.

Information Management in Municipal Bodies

Even though the above-mentioned changes have made information the fifth type of resource the board of an organisation needs to manage, one can notice that Indian municipal bodies have remained isolated entities. Knowing that efficient information management would stimulate urban development, and on its turn the national economy, hardly any municipal body has paid attention to the changing economic, social and philosophical realities. Apart from very few exceptions, no municipal body has made efforts to develop appropriate, holistic Management Information Systems to improve the quality of urban management. Until today, a scientifically developed and judiciously utilised MIS for decision-making is a rare phenomenon in a municipal governance system.

Some municipal bodies certainly have made efforts to develop information systems in recent years, pertaining to some of their functions, but these efforts have been patchy, limited and high-tech dominated. For example, nowadays there are some municipal bodies that use a GIS-based information system to plan services in towns or municipalities, or web-based tax collection systems, while they still have a pre-industrialised society. The two main reasons why MIS have not been applied in municipal bodies are:

1. Lack of Research, Literature & Data

Unfortunately, there is a lack of research, theoretical and fact-based literature and field data or case studies on Municipal Management Information Systems in India. There is hardly any literature regarding any of the micro-aspects of municipal administration, like finance or budgeting. The higher-level governments did appoint various commissions to review the municipal system, but nearly all the terms of references concerned macro-aspects. Except for the Committee on Budgetary Reforms, no committee has analysed the micro-aspects. Even state-level committees have omitted to do so. Three reasons explain this:

- Heterogeneity
- Lack of encouragement
- Isolation

One of the reasons is the heterogeneity in the municipal system. On a national level there is no model or structure that could serve as a reference point or guide for the individual states or municipal bodies. Every state in India consists of various local governments, who all have an enacted separate legislation. Municipal governments in our country do share certain common macro-level generic features (such as the colonial structure, outdated laws, their informal role, the decrease in share of the government's resources and expenditures, paucity of resources) but at a micro-level they are quite different from each other. Even within the same state they can differ from each other in terms of organisational structure, functions, the sources of receipts, classification of revenues and expenditures and administrative practices. It seems that this heterogeneity has stopped national and state-level committees from addressing micro-level issues.

The second reason is that the local government has never encouraged research and the documentation of micro-level aspects. Some individual research works have taken place, but they always concentrated on the macro-level aspects of the municipal government.

Finally, the relationship and contact between municipal bodies and their officials has been very weak for years. Municipal governments have been working in isolation. Consequently, there has been very little information sharing. Officials have hardly documented their experiences, successful innovations and founded facts.

Because of this lack of research, literature and data, municipal officers – and even elected members - find it difficult to understand and analyse municipal data. Recently some NGO's and CBO's have made an effort to analyse municipal budgets but they encountered serious difficulties.

2. Lack of Secondary Data

There is a lack of secondary data on for example the urban situation, economical changes and developments, and growth. In order to plan a municipal resource mobilisation strategy, for instance, one needs to know the pace of urban growth. Apart from municipal bodies, service providers and institutions also fail to provide primary and secondary data on the urban sector.

Indian municipal bodies have to deal with various external macro-level limiting factors they cannot and will not be able to control, which hinders the design and implementation of MIS. The four earlier mentioned trends certainly positively contribute to future changes, but progress is taking place at a very slow pace.

Manual on Municipal Management Information System

In the context of the above, it was felt that the availability of a manual on Municipal Management Information Systems is urgently needed and it is becoming a starting point for various municipal MIS-related reforms. This manual, however, is not an academic manual. It is based on first-hand experience at municipal administrations, the study of the MIS in four municipal bodies and the partnership cum consultative process with two municipal bodies. Its presentation is deliberately in the form of a handbook so that it can be easily utilised by any individual, NGO, bureaucrat, politician, municipal official, social activist or higher-level government.

Objective and Scope of Manual

Why this Manual on Municipal Management Information Systems? The sole objective is to contribute towards good urban governance:

- To improve managerial decision-making and to exercise efficient urban governance, municipal bodies are in need of a reference guide or handbook to design and implement an appropriate MIS
- To stimulate people's participation in urban governance in a meaningful and effective way, one needs a tool to understand how information regarding municipal affairs is generated and managed, how it can be utilised to carry out a neutral and constructive auditing of a municipal body's performance
- To raise interest in and to encourage the writing of literature on the micro-level aspects of the municipal government

To achieve all this, participation of both the municipal government and the people – individuals, action groups, NGO's - is needed. Both parties need to have the right knowledge and up-to-date tools. Due to decades of gross neglect of the urban sector, the situation is such that even if a municipal government wishes to improve its rudimentary management system, there is a lack of research, literature and (secondary) data, practical guidance and public support. This manual is an attempt to deal with one of the micro-level aspects of urban governance: the management of information.

Contents of Manual

The manual covers the following:

<i>Chapter 1</i>	<i>Introduction to Municipal Management Information Systems</i>
<i>Chapter 2</i>	<i>Management Information Systems – Theory and Practice</i> This chapter provides theoretical information about amongst others the concept of Management Information Systems, related

sub-concepts, systems, techniques and issues.

Chapter 3

Management Information Systems in Municipal Bodies – Existing Status

This chapter discusses various characteristics of municipal bodies and existing MIS in two municipal bodies.

Chapter 4

Designing and Managing Management Information Systems in Municipal Bodies

This chapter deals with the relevant aspects to design and manage a MIS in a municipal body.

Chapter 5

Model Municipal Management Information System Formats

This chapter gives generic department-wise, function or activity-wise MIS formats that a municipal body can adopt to improve its information management.

Chapter 6

Implementing Management Information Systems in Municipal Bodies

This chapter shows a generic and illustrative implementation plan to introduce or improve MIS in municipal bodies.

Chapter 2

Management Information Systems – Theory & Practice

INDEX

<i>Introduction</i> _____	20
Theory _____	20
Practice _____	20
<i>Status of MIS in an Organisation</i> _____	22
<i>Frameworks for understanding MIS</i> _____	23
1. Robert Anthony’s Framework _____	23
2. Simon’s Framework _____	25
3. Zani’s Framework _____	26
<i>Components of MIS</i> _____	28
1. Data _____	28
2. Information _____	28
<i>Data Processing</i> _____	30
1. Life Cycle _____	30
2. Data Processing Methods _____	31
<i>Information Economics</i> _____	32
1. Costs of Information _____	32
2. Value of Information _____	33
<i>Information Management and Control</i> _____	35
<i>Role of MIS at various Management Levels</i> _____	36
<i>Structure of MIS</i> _____	38
<i>Information Network</i> _____	39
<i>Components of MIS</i> _____	41
<i>Data</i> _____	41
<i>Summary</i> _____	42

2

Management Information Systems – Theory and Practice¹

Introduction

Theory

There has always been a lot of debate on the 'correct' or 'perfect' definition of a Management Information System. The sharply differing notions - and thus the existing significant controversy - are a matter of semantics, causing people to use this term for various different concepts. Some people use it to describe a system in which a manager has instantaneous access to detailed information of the entire organisation; others when talking about an appendage to the accounting system, blending it into the usual financial type of summary statements; others for any information processed by computers.

The most useful definition in practice, which comes closest to reality, is the one that emphasises the use of the information provided by a MIS rather than the technology or methodology applied to collect and disseminate the information.

DEFINITION OF A MANAGEMENT INFORMATION SYSTEM:

A Management Information System is an integrated man-machine system that provides information to support the planning and control functions of managers in an organisation

Practice

The above theoretical definition in practice implies that a MIS is a system that

- serves managers
- collects information
- helps to plan and control operations
- includes many kinds of information

These practical aspects will now be further elaborated, illustrated by some examples:

¹ This chapter is based on unit 15 to 17 on Management Information Systems, prepared by the School of Management Studies of the Indira Gandhi National Open University – New Delhi

1. Managerial Functions

The output of a MIS is information that is used by persons with managerial functions. If a system provides information to people having other positions, such information cannot be considered as part of a MIS.

Any organisation processes a lot of data. By law they are required to furnish certain information to various government regulatory agencies. Even though there might be some interfaces with a MIS, such a system does not make part of it. The same goes for salary disclosures, excise duty statements and sophisticated computer-aided design systems for engineering purposes.

2. Information Collection

A MIS collects information both systematically and on a regular basis in accordance with a well-defined set of rules, which makes the MIS part of the formal information network in an organisation.

In the following two cases the information is not part of the MIS, since it is only systematically collected and not regularly: at golf courses where information can have a major managerial planning significance or one-shot market research data collected to gauge the potential of a new product.

3. Planning and Control of Operations

The information provided by a MIS helps managers to make decisions regarding the planning and control of operations.

Every organisation needs to make a plan to perform certain operations and in order to function properly. A car manufacturer, for instance, has to perform manufacturing activities, a wholesaler has to receive and dispatch goods and a municipal corporation has to provide water to its area of jurisdiction. A municipal body must decide on how many and what type of pumping stations need to be installed in the next five years.

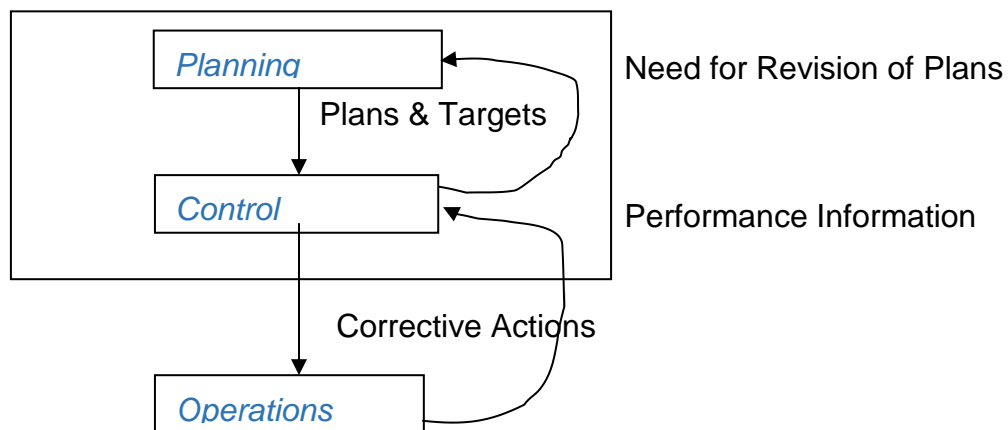
Every organisation has to control whether the operations are taking place according to the plans and targets developed in the planning process. For example, a municipal body needs to check the availability of financial means to control the tendering process and contractors who will execute the pumping station plans.

To assist operations, there are elaborate information systems. A car manufacturer uses a system that provides information on what to do with a particular batch of material to the workers on the shop floor. Route sheets can register the materials and components used in various machines. This system provides supporting information on the operations, but does not involve any managerial decisions and therefore does not make part of a MIS. Should the system provide information on productivity, machine utilisation or rejection rates, it would be part of a MIS. A municipal body may have a computer system

to send out property tax bills to the citizens. This operation is merely supporting. Should the system use its data to produce information about the economic profile of taxpayers, to make an ageing analysis of tax defaulters or of the area-wise growth in property taxpayers and revenue, it would be part of a MIS.

Systems that provide information on operations are often used as the basis for planning and control. No matter how technologically sophisticated, they are no MIS. The diagram below depicts the relationship between operations, planning and control.

Figure 2.1 - Relationship between Operations, Planning and Control



4. Types of Information

All possible kinds of information that support managers in taking decisions regarding planning and control are an essential component of a MIS: historical and current status data coming from a filed (paper or electronic) database, manual data collecting procedures, hardware, computerised information processing programs and operation research models.

Status of MIS in an Organisation

Traditionally, Management Information Systems were not designed but the end product of a process in which manual systems were automated. The way organisations used their computers or the type of operational problem they encountered determined the application.

Generally speaking a MIS is a limited data analysis obtained through routine data processing applications, like the analysis of invoice data for a sales analysis system to periodically report the sales according to region, outlet or product; or a report on the stock of a store with the data for an inventory control system. Such applications may be beneficial, outweighing the costs of computerisation in a marginal way.

Frameworks for Understanding MIS

Information processes in an organisation are labyrinthine and there is no map that could serve as a guide to study them. General frameworks help to understand Management Information Systems, distinguishing the various kinds of information that support managerial decisions. Some of such frameworks are:

1. Robert Anthony's Framework

Robert Anthony has delineated a framework that distinguishes the different types of planning and control processes that typically occur in organisations. His basic thought is that planning and control cannot be seen as two separate and homogeneous activities, as they are so closely interlinked. Instead of this segmentation, Robert Anthony divides management planning and control processes into three categories, resisting the "natural temptation to use as the two main divisions: (1) planning (roughly), deciding what to do, and (2) control (roughly), assuring that desired results are obtained":

- **Strategic Planning**

Stating the organisation's objectives, adapting the objectives, choosing the resources to attain the objectives, making the policies to govern the acquisition, use and disposition of the resources.

- **Management Control**

Managers check whether resources are obtained and used effectively and efficiently.

- **Operational Control**

This is to check whether specific tasks are carried out effectively and efficiently.

Figure 2.2 and 2.3 show the difference between the traditional framework and Robert Anthony's segmentation of a planning and control system.

Figure 2.2 - Traditional Framework

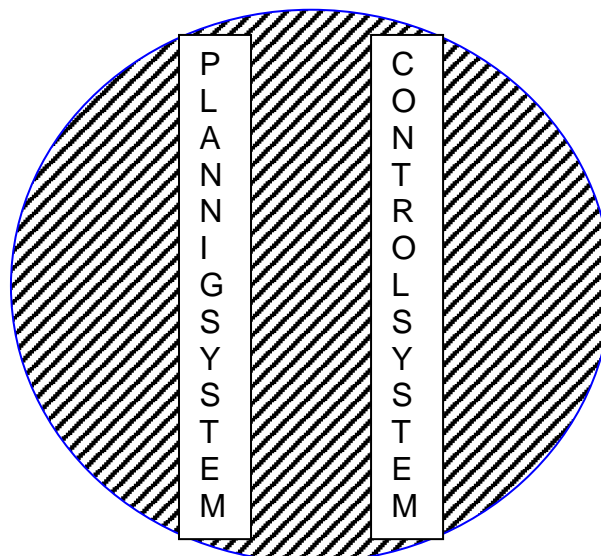


Figure 2.3 - Framework of Robert Anthony

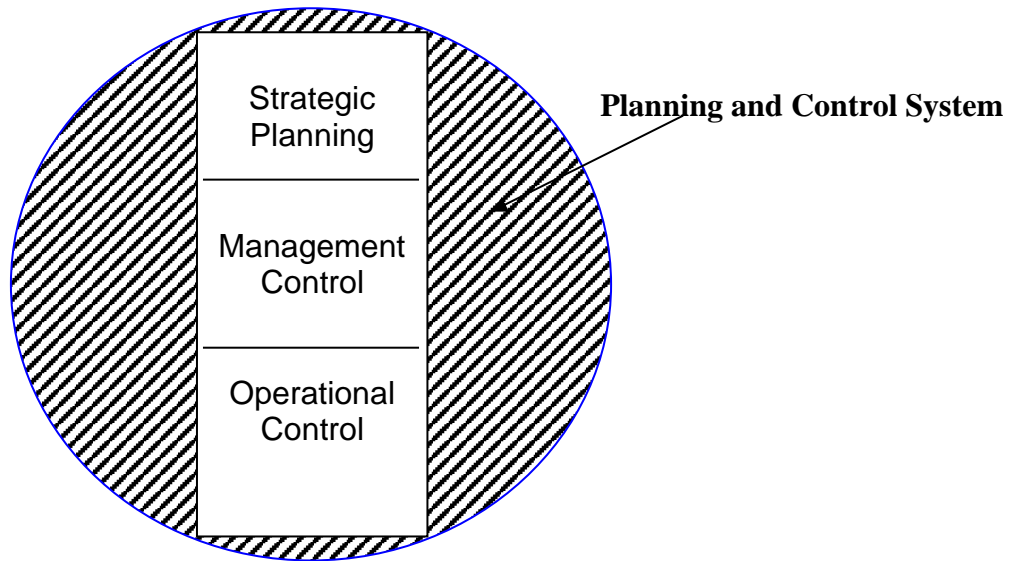


Table 2.1 gives some examples of planning and control activities in different functional areas, classified according to the Framework of Robert Anthony.

Table 2.1 – Planning and Control Activities

	Strategic Planning	Management Control	Operational Control
Production	Determining location new factory	Setting up monthly production program	Determining specific job/shifts on specific machine
Marketing	Entering export market	Media planning for advertising expenditures	Planning sales contacts to be made by salesman
Finance	Raising capital by issuing new shares	Determining maximum credit levels for customers	Determining what action to take against non-Payment
Personal	Deciding changes to be made in organisational structure	Determining promotions at middle and lower levels	Determining which worker will fill vacant post and shifts

Table 2.2 depicts the information characteristics that support the three categories of the Framework of Robert Anthony and highlights the substantial differences in information.

Table 2.2 – Information Characteristics

Information Characteristic	Strategic Planning	Management Control	Operational Control
1. Volume	Low	Intermediate	High
2. Level of aggregation	High	Intermediate	Low
3. Frequency of use of particular type of data	Low	Intermediate	High
4. Currency requirement	Low	Intermediate	High
5. Accuracy	Low	Intermediate	High
6. Scope	Wide	Intermediate	High
7. Sources	Significant amount from external sources	Mostly internal	Entirely internal
8. Predictability of use*	Low	Fairly high	Very high
9. Variability with user**	High	Intermediate	Low
10. Distance of user (in organisational terms) from sources	Far	Fairly close	Close

* How far in advance can information needed to take a certain decision be stipulated?

** How much will the information needed to take a certain decision vary per individual?

Source: Course material on Management Information Systems, School of Management Studies, Indira Gandhi National Open University - New Delhi

2. Simon's Framework

Whereas the Framework of Anthony is concerned with the objective of the decision-maker, Simon's Framework examines the process of decision-making. Simon divides this process into three stages:

- **Intelligence**

The decision-maker recognises the problem or fact that requires a decision.

- **Design**

Finding alternative solutions for the problem or to exploit the opportunity

- **Choice**

Choosing one of the alternatives generated in the design stage.

There are three types of decisions:

- **Programmed Decisions**

All stages follow a well-defined procedure. Programmed decisions are repetitive and can be modelled mathematically in their entirety. The classical example is an inventory-ordering decision.

- **Non-programmed Decisions**

None of the stages follow a well-defined, pre-specified procedure. Non-programmed decisions are new and cannot be structured in a logical-mathematical way. They have to be treated on a case-to-case basis, like the decisions to set up a new factory or to launch a new line of products.

- **Semi-programmed Decisions**

At least one and not more than two stages follow a well-defined, pre-set procedure. In a variance analysis, for example, the intelligence stage is well-structured, just like the comparison with a budget or standard. The stages of design and choice, however, do not follow a given procedure.

3. Zani's Framework²

This framework draws upon the earlier two frameworks. According to Zani, an effective MIS can only be designed 'top-down', viewing the organisation's information needs from the vantage point of managers rather than 'bottom-up', which automates existing clinical procedures. To design a MIS, there are five important determinants:

- Opportunities and Risks
- Company Strategy
- Management and Decision-making Processes
- Available Technology
- Available Information Sources

The organisational structure of a company depends on the above determinants. Tasks with clear interrelationships are assigned to the respective persons and determine the various information needs of the company.

An organisation needs to know the variables, which are their key to success. A textile company, for example, works in the fashion market. They must focus on product promotion; they need to know the customer's response to the product and monitor competitive changes. A mill selling grey cloth, however, needs to focus on manufacturing and distribution costs. The key success variables determine the key tasks of an organisation and thus help to identify the priorities for the information system development. The system should provide information that helps the management to perform these tasks efficiently. The tasks can be related to strategic planning, management control or operational control. The contents and frequency of reports that provide the necessary information for key tasks must be identified through an analysis of

² Zani W.S. , 1973, A blue print for MIS, Harvard Business Review as provided in course material on Management Information Systems by Indira Gandhi National Open University, School of Management Studies – New Delhi

the decision-working processes. In this context the framework of Robert Anthony and Simon prove to be useful.

Zani advocates a participative process of MIS design in which top management and functional managers identify the critical areas of operations and specific information requirements. To fulfil this role properly, managers must be aware of the major sources of information, the alternative methods of supplying data, the impact of the fast developing information technology and the fact that the systems are dynamic and changeable. It is up to the information and data processing specialists to give their contribution. His framework will help to understand. Designing a MIS depends on the situation:

- **No Computing Experience**

If the organisation has no experience with computing, the Framework of Zani can identify their ideal applications. Key success variables are seldomly obtained through questionnaire surveys of managers. They need to be identified through an in-depth analysis of the company's past performance and present status. The quantitative measure might be useful. Precise definitions of performance indicators enable the analyst to understand and quantify the likely impact of improvement in different tasks of planning and monitoring. The performance of a textile unit, for example, depends on two indicators: the contribution per loom shift and the fixed costs per loom shift. Similarly, the performance of a shipping company can be measured by the gross operating profit per day per voyage.

Computerising an organisation is a long-term process. The development and implementation of the generated applications and its configuration need to be done in a phased manner. The first applications should have a direct impact on the organisation's performance and must thus be easy to implement, making few changes in the existing procedures and system. This makes it easier to implement more complex systems in a later stage.

- **Computing Experience**

For organisations that are familiar with data processing and would like to graduate to MIS, the choices are limited. On the one hand, the existing computer technology, manpower and the past experience with computer applications condition the future growth of MIS. Marginal additions to data fields, new coding structures and revised procedures, on the other hand, are introduced to make the database and reports more useful.

A large effort has been made to create useful databases that capture data while executing routine data processing systems. These data can then be analysed to produce periodic planning reports for monitoring. Examples of such systems are sales analyses based on invoice processing, inventory controls based on stock accounting and costing and profitability analyses based on financial accounting systems.

Components of MIS

It is contradictory that on the one hand there is an abundance of data, but that on the other hand there is no adequate information for rational decision-making and thus a great paucity of information. Data and information: they are the two basic components of a MIS. In practice these two terms are often used interchangeably but there is a significant difference.

1. Data

DEFINITION OF DATA:

Data is a collection of facts, statistics, numbers, letters, figures or symbols that can be processed, maintained or produced by a Management Information System.

If data is isolated - and thus unrelated and uninterrupted - it may not be very useful. Data is only valuable if it can be used for organisational activities, like sales, production, financial and personnel issues. Managers are daily confronted with a large amount of reports, generated through data processing systems. They are being overloaded with data.

2. Information

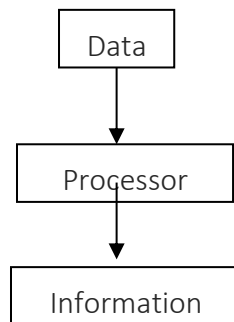
DEFINITION OF INFORMATION:

Information is the product of processed data, placed in a certain context, providing knowledge and clarity to the recipient.

Information is an occurrence or set of occurrences that carries messages through any means of communication. Information is the contact, initiating stimuli between sender and receiver. The signs are coded representations of data and provoke action.

Data is the 'raw material' and information the 'finished product'. What is information for one person may be data for another. Information is considered to be a resource for money, materials, men, machines, methods, markets and management. Consequently, information resources – stored data of all types - can be used and re-used for information resources management.

Figure 2.4 - Conversion from Data into Information



Information describes a certain situation, but perceptions and interpretations can differ significantly. Information with the same message, content and quantity, communicated in the same way and at the same time, does not necessarily imply that the receiver uses it similarly.

Information must serve the needs of the manager. It has to enlarge the knowledge to plan operations and discharge personal responsibilities. If the data is properly organised, the manager will be able to react appropriately; if not, managerial problems will not be solved. A manager has many responsibilities. Time is limited, and therefore information should be restricted to mere useful data.

Information can be classified into five groups:

- **Action - Non-action**

Non-action information is synonymous to data.

Action information requires the recipient to react accordingly after having received the information.

- **Recurring - Non-recurring**

Recurring information is generated at regular intervals, like periodic reports.

Non-recurring information is non-repetitive and concerns special studies that help to make management decisions.

- **Documentary - Non-documentary**

Documentary information can be for example written, a microfilm, a punch card, a magnetic tape, a floppy disk or an accounting report.

Non-documentary information is transmitted orally or received by an individual observation.

- **Internal - External**

The distinction is obvious. Managers at different levels in an organisation require different kinds of internal and external information.

- **Historical - Future**

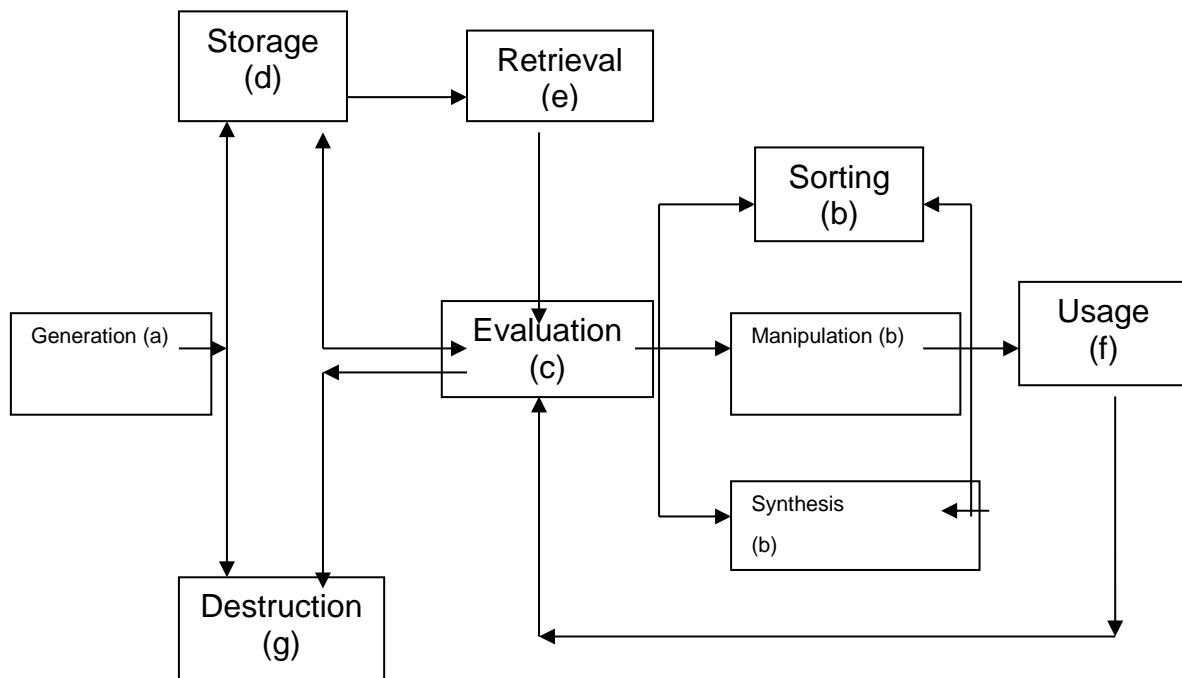
Again the distinction is obvious. Historical information could be futile, unless it is used for future projects.

Data Processing

1. Life Cycle

The life cycle of data is as follows: generation (a), sorting/manipulation/synthesis (b), evaluation (c), storage (d), retrieval (e), usage (f) and, finally, destruction (g).

Figure 2.5 - Life Cycle of Data



Source: R. G. Murdick & J.E.Ross *Information System for Modern Management*, Prentice Hall Int.

The generation of data can take place internally and/or externally. The data can be recorded in the form of a sales slip, personnel form or purchase order.

The randomly accumulated data needs to be sorted, classified and synthesised to reveal appropriate information. For example, sales data can be classified product-wise, territory-wise or salesperson-wise. Data processing might entail some manipulations and calculations based on certain formulae, in order to derive for instance employees' payments, customers' bills and financial ratios. Management science or operational research modes can be used to make an optimal product mix, planning or economic order. Data is constantly transmitted to the user in its processed form. It is transferred from the source to the storage, processed and passed on to the user. After working on it, the user returns it for storage and the data can be used for further retrieval.

Some type of continuous verification and evaluation of data needs to be taken because there is also an economic aspect: the costs of processing data versus the value of information. Therefore, data files should be continuously monitored to eliminate useless data.

The captured data needs be stored or documented before usage in for example an electronic device, a microfilm, punched card or tape.

Stored data needs to be retrieved by searching and accessing the specific data elements from the medium in which it is stored. Retrieved data can be converted or reproduced and stored differently.

Ready-to-use data can be retrieved and turned into information at the appropriate time for decision-making.

Destruction of data – the terminal stage - can be done on a routine basis, on a case-to-case basis or in review of old records.

2. Data Processing Methods

Any type of organisation has to deal with a certain amount of paper work. Over the years, various types of data processing methods came into existence:

- **Manual**

In the past, data processing consisted of manual procedures whereby the data operations were performed by hand and basic devices such as pencils and paper.

- **Electro-Mechanical**

The electro-mechanical method is actually a symbiosis of man and machine, like typewriters, cash registers and time clocks.

- **Punched Card & Unit Record System**

The punched card method came into use along with the unit record system, in which data are recorded or punched on a card. A number of cards placed logically and sequentially in a deck are called a 'file'. This method had a remarkable reduction in the manual intervention. However, it was only after the development of the electronic computer that a machine became capable of performing most of the data operations without human intervention.

- **Computer**

Initially, many organisations used computer systems to perform the same functions as Automatic Data Processing (ADT) systems. In simplified terms, a computer is a configuration of an input-device, a Central Processing Unit (CPU) and output-devices. A major innovation in the development of the CPU was the storage program concept: instructions were executed at a very high speed and fit to do

repetitive calculations. Nowadays, data processing is called Electronic Data Processing (EDP).

Regardless of the capacities of the computer, human beings are far more superior. Nevertheless, more and more researches are being done in Artificial Intelligence (AI) and the development of knowledge based expert systems. Recently, significant technological developments have reduced the costs and size of the computer and increased its speed to such an extent, that organisations of almost any size can now invariably benefit from computer data processing. The structure of supply and demand of computers is very broad and therefore the hardware costs are decreasing. The software costs, however, are rising and thus making the expenses for information a crucial item for any management.

Information Economics

Information is a valuable resource in any organisation. However, the preparation of formal information costs money. A cost-benefit analysis is a tool to decide on the expenses. Information economics is rather complicated, since information is conceptual and has, apart from symbolic representations, very few tangible characteristics. Difficulties might arise while measuring the costs of providing the information and the value of information.

1. Costs of Information

The expenses to operate an information system depend on the following costs:

- **Hardware**

This is usually a fixed or sunk cost. The fast developing information technology, especially in the field of electronics, causes a sharp decrease in price.

- **System Analysis, Design and Implementation**

This is a sunk cost. System analysis, design and implementation have to do with a methodology for overall electronic data processing procedures. The costs for the preparation of programs and the so-called software costs keep on rising, computers being a very wanted product.

- **Conversion**

This is a sunk cost and involves any kind of change from one method of data processing to another.

- **Space and Environmental Control Factors**

This cost is semi-variable. Examples of space and environmental control factors are air-conditioners, dehumidifier systems, power control units, standby generators and security. The size of the computers has become much smaller, whereas power and capabilities have increased considerably. Today many mini-and-microcomputers so not require all the above mentioned control factors.

- **Operation**

These costs can be both variable and non-variable. The operation costs include personnel, facilities and systems maintenance, utilise and support facilities.

2. Value of Information

Information must have certain quantitative and descriptive characteristics or attributes to be 'valuable':

- Relevance
- Quality
- Effectiveness

Information must primarily possess attributes of relevance: availability and timeliness. Objectivity, sensitivity, comparability, consciousness and completeness are only desirable and necessary to a certain extent, whereas the maximum quantifiability is desired.

Quality refers to the presence or absence of ambiguities in information. All information should have a certain quality. Measures of quality are validity, accuracy and precision, which are especially important and applicable to quantified information. Quality can be defined as 'excellence' or 'fitness'. It is no absolute concept and thus has to be seen in a given context. Quality is related to for example primary and secondary users, operations personnel, control personnel and maintenance personnel. Good quality is costly, but information is a critical organisational resource; low quality information has an adverse effect on any organisational performance.

Even if information is transmitted efficiently and interpreted correctly, it may not be used effectively. The quality of information depends on the action taken and the eventual decision taken. Information may be evaluated in terms of 'utility', which may facilitate or retard its use. It is difficult to quantify the contribution of utility on information, but it is the decision-maker's degree of satisfaction with the output of the formal information system that counts. These 'utilities' are explained below:

- **Form**

The more the form matches the requirements of the decision-maker, the more increases the value. If a manager is looking for a graph depicting the sales history, the data should be graphical rather than tabular.

- **Timing**

Information has more value to the decision-maker if available exactly when needed. A difficulty might be that the decision-maker himself does not know the appropriate timing.

- **Accessibility**

Information is more valuable if it can be accessed or delivered easily. Online systems maximise both time and place utility.

- **Possession**

The possessor of the information is the one who controls the dissemination.

There is a strong bias towards quality rather than quantity of information. It is possible to estimate the biases of the decision-makers and provide suitably adjusted information. In most information systems, the receiver of information might not know the bias or errors that may affect the quality. The notion of errors is in contrast to bias. Errors are a more serious problem and may result from:

- Incorrect data measurement and collection methods
- Failure to follow correct processing procedures
- Loss or non-processing of data
- Wrong recording of data
- Incorrect history (master) file or use of wrong history file
- Mistake in processing procedure
- Deliberate falsification

Errors can be detected with internal controls, internal and external auditing, addition of 'confidence limits' to data and user instruction in measurement and processing procedures to evaluate possible errors. The first two methods are to reduce the uncertainty about the data and thus increase the information contents. The last two provide the user with confidence limits

Theoretically, decision-making can be done under perfect circumstances, using only perfect information. In this case there are only possible outcomes and no probable information.

VALUE OF INFORMATION:

Value of change in decision behaviour (caused by availability of information) MINUS costs of obtaining information.

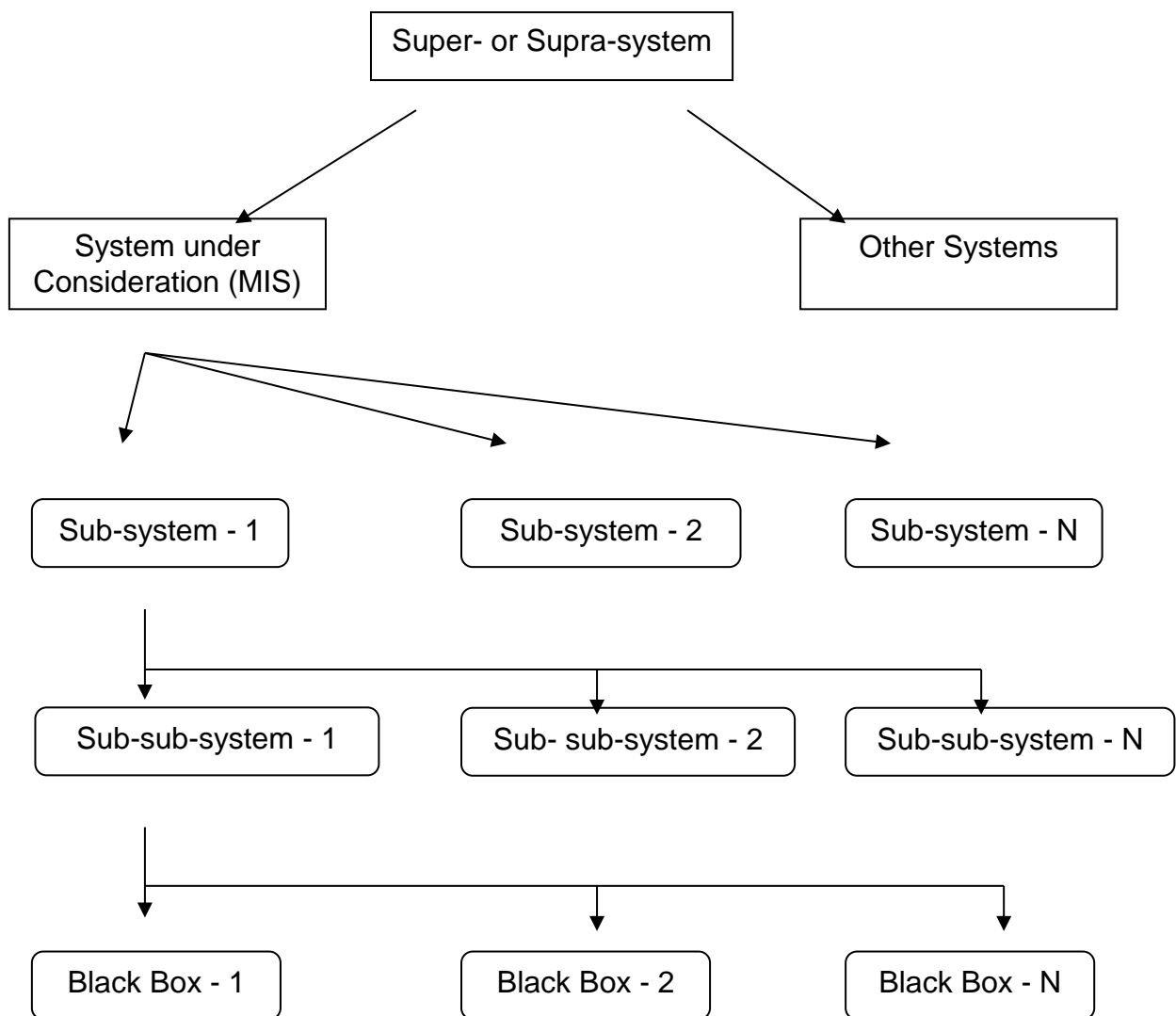
Given a set of possible decisions, a decision-maker will select one based on the information at hand. However, if new information changes the decision, the value of the new information is the difference in value between the outcome of the old and the new decision, less the costs of obtaining the new information. The value of perfect information is the difference between the 'optimal' policy without perfect information and the 'ideal optimal' policy with perfect information.

This concept is useful because it demonstrates how the value of information can influence or change a decision. However, decisions are usually made without perfect information because unavailable due to high costs, time limits, a lack of knowledge about the availability of information or because the information is not available in the appropriate form.

Information Management and Control

In the past, managers, decision-makers and problem-solvers used piecemeal solutions, thinking in an isolated compartmentalised way - independent of any other operational unit in the organisation. The adoption of the so-called 'systems approach' has only existed for the past few years. Besides professional managers, also political administrators have become aware of the need to adopt an integrated holistic perspective by adopting the systems approach to problem-conceptualisation and decision-implementation.

Figure 2.6 – Hierarchy of Systems



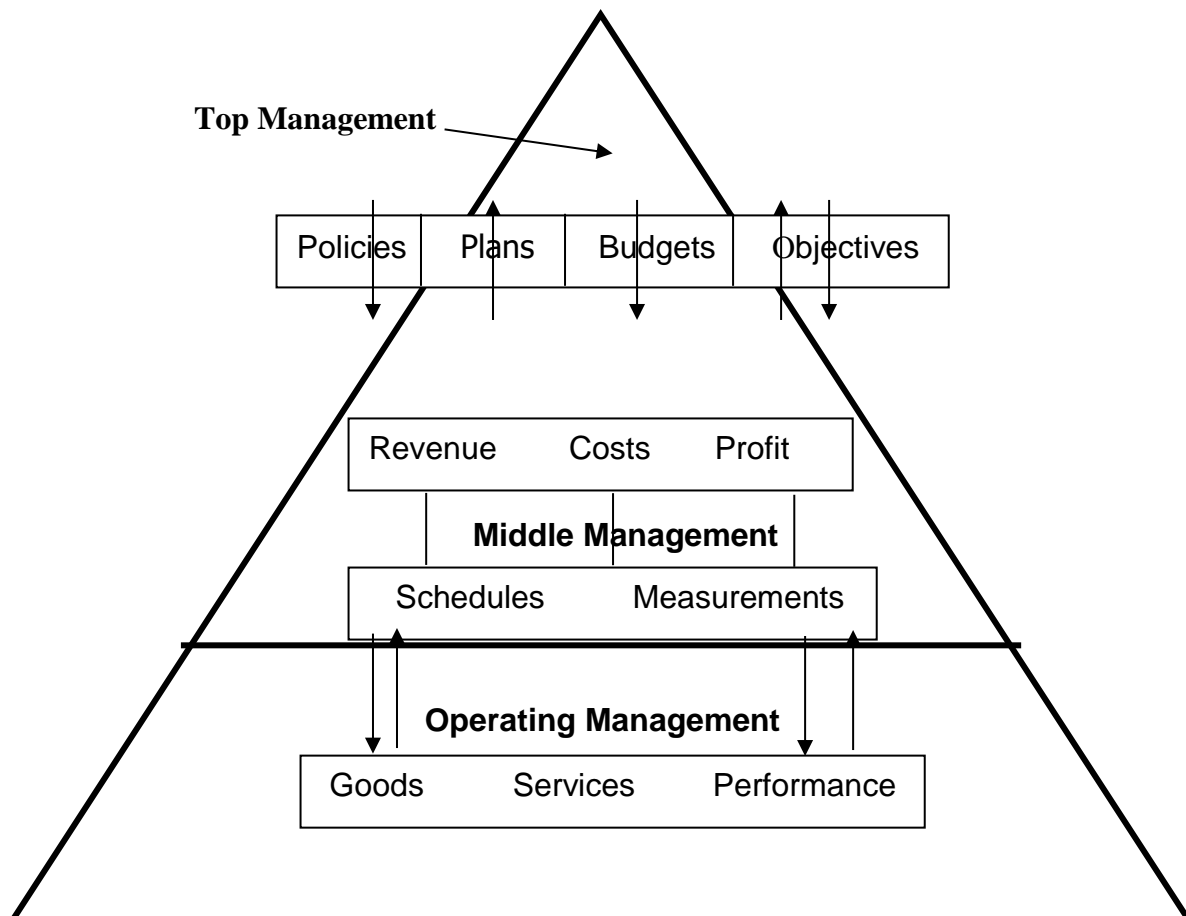
Today we are in the midst of an era of 'systems': transport systems, educational systems, healthcare delivery systems, defence systems, economic systems, communication systems, management information systems, transaction processing systems, decision support systems, computer systems and so on.

The exact meaning of a 'system' is complex. It is an entity - conceptual or physical - that consists of interdependent parts or components. It is an interlocking complex of processes, characterised by many reciprocal cause-and-effect pathways. The elements or components are directly or indirectly related in a network, allowing space for feedback and control to check whether the system is achieving its goals or objectives. Any system must have an objective or a set of objectives. In a large context, a system is an assembly of procedures, processes, methods, routines or techniques, united by regulated interaction to form an organised whole. A system cannot exist in isolation unless it is a totally closed system.

Role of MIS at Various Management Levels

Management can be understood by observing how managers work: they delegate. Managers usually perform the following functions: planning, organising, staffing, directing, coordinating, reporting and budgeting. Management is a process of achieving the organisation's goals and objectives by judiciously making use of resources of men, materials, machines, money, methods, messages and moments. The last two mentioned resources are vital for a manager regarding to information.

Figure 2.7 – Interaction of Management Levels



Strategic decisions are taken at the top level, tactical decisions at the middle and operational decisions at the bottom level. The type of problems and decisions at the bottom level are quite deterministic and structured, which makes it possible to take programmed decisions. At a higher level, however, situations become fuzzy, ambiguous and unstructured, causing non-programmed decisions. With the introduction of the computer, routine EDP-type activities take the essential programmed decisions on an operating level. The fast advances in electronics, communication and computers may cause a fast progress in the field of Artificial Intelligence and accordingly devise knowledge-based expert systems, which are useful to cater for complex non-programmed decisions at the strategic level.

Although the classical pyramidal structure is generally acceptable, modern complex organisations seldomly fit this clear-cut configuration. These days managements have to deal with resources that are geographically spread and organisationally diverse. Between the decision-maker and the resources many factors are involved in an information exchange and can thus influence messages – both internally and externally. Internally people and data; externally interest groups, the government, consumers, labour representatives and national and international agencies. A modern manager must be capable of managing the information systems at all three levels.

This hierarchical view of management is important for two reasons: information needs to be different at different management levels and the amount of time devoted to any given function varies considerably per level. The job content at various management levels is further elaborated in Table 2.3.

Table 2.3 - Job Content of Management Levels

Character	Top Management	Middle Management	Operating Management
1. Focus on Planning	Strong	Moderate	Weak
2. Focus on Control	Moderate	Strong	Strong
3. Time Frame	Max. 5 years	Max. 1 year	Day-to-day
4. Scope of Activity	Broad	Entire Function Area	Single Sub-Function/Task
5. Nature of Activity	Relatively Structured	Moderately Structured	Highly Structured
6. Level of Complexity	Very Complex Many Variables	Less Complex Better defined Variables	Straight-forward
7. Job Measurement	Difficult	Less Difficult	Relatively easy
8. Result of Activity	Plans, Policies and Strategies	Implementation Schedules, Performance Yardsticks	End Products
9. Type of Information Utilised	External	Internal, reasonably accurate	Internal Historical Highly Accurate
10. Mental Attributes	Creative,	Responsible,	Efficient,

	innovative	persuasive, administrative	effective
11. Number of People Involved	Few	Moderate	Many
12. Department/ Divisional Interaction	Intra-Division	Intra-Division, Inter-Departmental	Intra-Departmental

Source: J. Kanters, 'Management Information systems', 3rd Edition Prentice Hall: Englewood – Cliffs

In the context of a MIS, the best definition of 'management' is:

DEFINITION OF MANAGEMENT:

The process of

- Selecting objectives
- Judiciously allocating resources
- Determining operational plans and schedules
- Keeping control of progress
- Evaluation through feedback

All areas require certain decisions to be made.

Few concepts have been more vague and misunderstood as the definition and scope of a MIS. Many experts wrongly think that a MIS is the computerisation of clerical work. Others hope, probably in vain, that in the future there will be an all-knowing expert computer system that provides managers answers and takes decisions for complex problems by simply pressing a button.

A MIS is a means to connect the managed operating systems by exchanging information. A MIS is more than a set of ideas or concepts. It is an operational system performing a variety of functions to produce outputs, which are useful to the organisation's operating personnel and management. Managers have always had 'sources' of information; a MIS provides a system of information. This new approach is indispensable and must precede the design and use of a MIS. The computer is only a component or a tool of the MIS, not the MIS itself, nor the central focus of a MIS. A management must take an active role in the design of the MIS. Technical knowledge is preferable but not necessary. The essence of a MIS is the integrated planned system and not data processing systems.

Davis and Olson define a MIS in the following manner:

DEFINITION OF A MIS ACCORDING TO DAVIS AND OLSON:

An integrated user machine system providing information to support operations, management and decision-making functions in an organisation

The system, if computer-based, utilises computer hardware and software, manual procedures, decision models and preferably a database. A database is a centrally controlled integrated collection of logically organised data. The underlying concept is that the data needs to be managed to get processed and to have the appropriate quality and value. Single highly integrated systems appeared to be too complex to implement. Now the concept of MIS is changing to a federation of sub-systems, developed and implemented as needed but conforming to the overall plan. An organisation may have many information systems that serve managerial needs in various ways rather than one single global MIS.

A MIS is an organised method of providing historical, up-to-date and projected information relating to the organisation's internal operations and external intelligence by good environmental scanning techniques. All organisations have some kind of information system, albeit a simple filing cabinet or account ledger. An information system should have a systematic formal assemblage of components that performs data processing operations in order to:

- meet the legal and transactional data processing requirements
- provide managers information on all transactional data processing requirements
- provide managers information on all reports, as required to internal and external constituents

Every report, except for a statutory requirement, needs to have an element of utility. A manager does not have time to register all facts, routine matters, creative and innovative work and strategic decision-making. Therefore, 'exception' reports are needed. A brainstorming session of executives at different levels might be useful to specify what they are looking for, what needs to be done, by whom, using which data and in what form. The abolishment of reports on daily matters would create confidence and mutual trust. A selective information management, similar to the selective inventory management of value based ABC-analysis and critically based VED (Vital, Essential, and Desirable) form, could be pursued.

Information Network

In any organisation, information flows from one place to another, from one decision-maker to the other. Perhaps it is this phenomenon that motivated Forrester to conceptualise an organisation as an Information Network.

He observed that organisations are very complex interconnected systems. Decisions are being made at different moments at various hierarchical levels. Each action generates information that can be used at several, but not necessarily at all decision points. The entire structure of interconnected information feedback constitutes the total system. The interlocking network of information channels emerges at various points to control physical processes such as hiring employees, building

factories, and producing goods and/or services. A local decision point backs up every action point in the system. The reach of the information sources of the local decision point backs up every action point in the system into other parts of the organisation and the surrounding environment. Management is a process of converting information into action, a process analogous to decision-making.

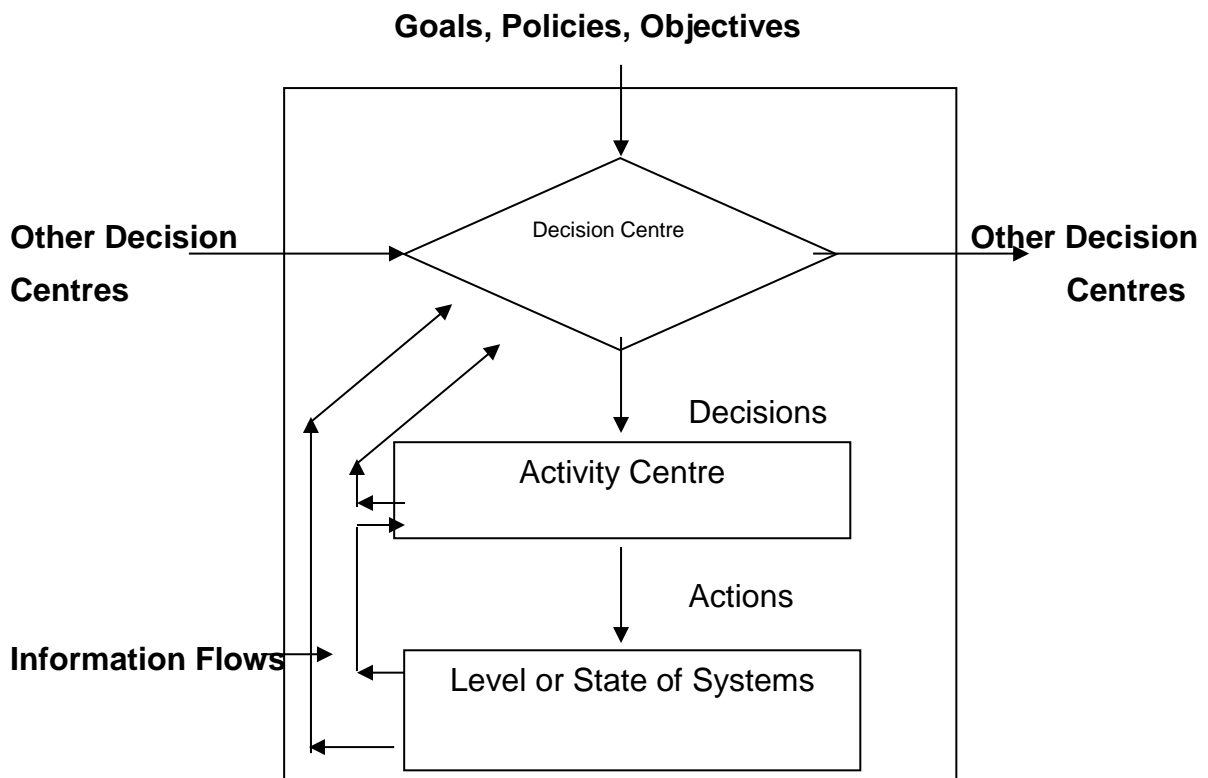
Forester conceptualises six information feedback networks in an industrial setting:

- materials
- orders
- money
- personnel
- capital equipment
- information

A policy is a rule, stating how the day-to-day operating decisions are being made. Decisions are the result of applying the policy rules to the particular conditions that prevail at any moment.

Essentially, there is an Activity Centre, in which certain actions or activities take place, changing the level or state of the system. These activities are carried out after managers or persons of a higher level have given directions at the decision centres, which have their own set of decision procedures or norms. The combination of an Activity Centre and a Decision Centre is termed a Functional Unit, because it performs a function. The Functional Unit, which shows the flow of information, is represented in Figure 2.8.

Figure 2.8 – Information Flow in a Functional Unit



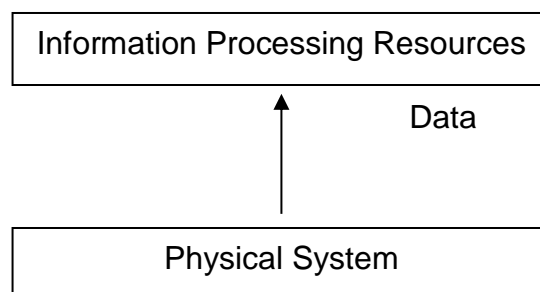
An information system can be designed to provide information to each Functional Unit, and thus to each strategic planning level, management control level and operational level. The information system for related Functional Units can be clustered into an Information Sub-System. An operational function consists of one or more types of actions, executed by the same or different Functional Units, which regulate the entire in-flow and/or out-flow to or from various levels. A Management Control Centre consists of one or more management people together with their supporting staff. They act as a Decision Centre for a group of Functional Units or for a group of subordinate Management Control Centres.

An Information Sub-System is a special operational Functional Unit; a MIS is an operational function whose parts, corresponding to Functional Units, are Information Sub-Systems of other operational functions. An operational control module can also be seen as part of an Information Sub-System, which supports the Functional Units of an operational function. A Management Control Module is the part of an Information Sub-System that supports the Management Control Centre of an operational function. Parts of Information Sub-Systems - so-called modules - are the basic entities, which help to adopt a modular approach to a MIS design. The use of modules is desirable because it allows improved project control. The modules can be written and tested separately allowing more efficient planning and implementation in phases.

Components of MIS

A MIS model reflects a formal and informal flow of communication of messages, data or information. At the bottom there is the physical system: the workers, and the equipment and facilities used to produce the products and/or services. The generated internal data is passed onto the information processing resources - manual or computer-based but preferably using a database - that generate the internal information formally. The formal MIS is prescribed by procedures such as a computer program.

Figure 2.9 – Communication Flow



The internal and external environmental information is passed onto the appropriate executives or managers, who acquire their internal and external information in an informal, non-formal manner. The informal MIS has no spelled-out routine. Attention must be paid to the informal organisation structure. A management should try to identify information needs that are not being fulfilled by the formal system and try to incorporate as many of these flows into the formal MIS as possible. The informal power centres of the organisation that can influence the success of the MIS should straightaway be superimposed on the existing organisation structure.

The MIS can partially be used by anyone in the organisation, like the computer resources in case of a computer-based MIS, and is public.

Another part is restricted to the person who is establishing it, like the information of an executive, and is thus private.

Gordon Davis conceptualised the various MIS components as shown in figure 2.10

Figure 2.10 – Formal and Informal Components of MIS

Public	Public Formal	Public Informal
Private	Private Formal	Private Informal

Summary

Information has become the fifth resource that the board of an organisation is required to manage. The quality of decision-making depends heavily on information. The importance of and the need for information are increasing at a very high speed: today we are living in the Information Technology Revolution.

Data or unprocessed information is not useful, unless there is a Management Information System. It is necessary to provide the right type of information to the right decision-maker at the right time. The desirable characteristics of information are availability, timeliness and quantifiability. A MIS should strive to achieve this.

Information is not costless but brings significant benefits to an organisation. Obviously, the costs of information should not be more than the benefits. Therefore, appropriate cost-benefit analyses should be carried out before implementing a MIS. Similarly, the MIS should not be too sophisticated for the staff and adjusted to the level of the human resource.

The process of developing a MIS is never-ending as organisations strive hard to take advantage of new technologies and methodologies in order to meet the growing information needs of a new generation of managers. A MIS should be designed for a certain organisation, keeping the given characteristics.

Chapter 3

Management Information Systems in Municipal Bodies - Existing Status

INDEX

Concept of Local Government _____	46
Nature of Local Government _____	46
1. The Relationship between Municipal Boundaries and Urban Settlements	47
2. The Extent of Municipal Functions	47
3. The Degree of Integration in a vertical Chain of Administration	47
4. The Location of executive as opposed to legislative Responsibility	48
5. The Extent of external Supervision	48
6. Non-Municipal Authorities or Enterprises	48
7. Involvement of private Sector	48
Legal & Administrative Framework of Indian Municipal Bodies _____	49
Indian Municipal Government - An unaugmented Institution _____	51
Indian Municipal Bodies - Internal (Micro-Level) Complexities _____	53
MIS in Municipal Bodies - Case Studies _____	55
MIS in Navi Mumbai Municipal Corporation	56
Introduction _____	56
MIS in Navi Mumbai Municipal Corporation _____	57
1. Administration Department _____	57
2. Encroachment Department _____	58
3. Medical/Health Department _____	58
4. Public Health Engineering _____	59
5. City Engineering Department _____	60
6. Water Supply Department _____	61
7. Education Department _____	61
8. Property Tax/Assessment Department _____	62
9. Town Planning Department- Construction Works _____	63
10. Accounts Department _____	63

11. Dy. Municipal Commissioner (Wards)	64
12. Department of Cess	65
13. Transport Department	65
14. Fire Department	66
15. Public Relation Department	67
16. Computer Department	68
MIS in Vadodara Municipal Corporation (VMC)	68
Introduction	68
1. General Administration Department	69
2. Zonal/Ward Offices	69
3. Accounts Department	70
4. Tax Assessment Department	70
5. Octroi Department	71
6. Town Planning and Building Permission Department	71
7. Land and Estate Department	72
8. Audit Department	72
9. Municipal Council/Secretary Department	72
10. City Engineer and Additional City Engineer's Office	72
A. Water Supply Department	73
B. Sewerage Department	73
C. Electrical-Mechanical Department	74
D. Roads Department	74
E. Storm-water Drainage Department	74
F. Public Housing and Building Department	74
G. Central Store Department	75
H. Vehicle Pool & Workshop Department	75
I. Streetlight Department	75
J. Solid Waste Management Department	75
K. Health Department	76
L. Gas Project	76
M. Garden Department	76
N. Zoo Department	77
O. Fire Brigade/Service Department	77
P. Other Sections	77
Summary	77

3

Management Information Systems in Municipal Bodies - Existing Status

Concept of Local Government

The evolution from a pastoral and nomadic lifestyle to a settled life made the existence of social groups or communities inevitable. Likewise, a new form of organisation known as the local community or municipal government evolved, partly out of social necessity and partly as a natural way of social living. A local government as an expression of community government has a more social than political function, even though state laws shape its structure and regulate its behaviour. This explains why many English counties pre-date their state government and why village panchayats, 'tiny republics', have out-lived many dynasties in India.

The concept of local government is multi-dimensional. A variety of factors contribute to its birth and growth and the development of its form, structure and functions. Their process of evolution and adoption is an interactive process within the larger social environment: the polity, economic organisations, the geographical setting, demographic trends, and the historic and cultural ethos. Therefore, a local government should be seen in its context.

Local governments spring from Lock's 'first contract' of civil society. The structure of local governments differs extensively per society. Maximum decentralisation, legislative dominance, co-option through a committee system, multi-purpose activities and voluntary citizen participation characterise the English pattern. The French pattern is characterised by centralisation, a chain of command, a hierarchical structure, executive domination and legislative subordination. A particular characteristic of the American society is a maximum local autonomy. The Indian situation does not fit into any of the three patterns. It has a colonial structure, a minimal functional and fiscal sphere, a negligible citizen's partnership, a weak chain of command, a lack of integration in state plans and virtually no local autonomy.

Nature of Local Government

Despite the tremendous variations in character, a local government is a worldwide institution. Almost all towns and cities have a representative or quasi-representative system of local government. The seven most important differences are:

1. The Relationship between Municipal Boundaries and Urban Settlements

In cities as Bombay, Lusaka and Nairobi, a single local authority is responsible for the Core City and virtually all suburban developments. Cairo, Calcutta and Manila, by contrast, are fragmented in a number of municipal jurisdictions.

2. The Extent of Municipal Functions

Refuse collection, market administration, local road maintenance, cleansing, drainage, lighting, parks and recreations are virtually always municipal responsibilities. What varies widely is municipal involvement in:

- Public utilities: water, sewerage and electricity;
- Water and sewerage can be provided by a national corporation but are typically provided by a metropolitan corporation or a municipally controlled enterprise. Electricity is usually the responsibility of a national utility, but it can be a responsibility of the local government.
- Social services;
- Municipalities often provide primary schools and clinics, but less frequently secondary schools and hospitals.
- Public protection;
- Fire services are frequently municipal, but not the police forces (except for European and North American countries).
- Trunk roads;
- They can be a national, provincial or local responsibility.
- Provision of rental or purchase housing or serviced sites;
- This can be a municipal or special purpose authority activity.
- Regulation of land use and development;

This is usually a municipal responsibility, but occasionally provincial or metropolitan.

3. The Degree of Integration in a vertical Chain of Administration

American, British and - to some extent - Spanish traditions treat municipalities as separate political, legal and administrative entities, subject to varying degrees of external supervision. French and Ottoman traditions place local governments within a vertical hierarchy of governmental institutions. Locally elected assemblies have legislative powers, but administrators – like governors – often have the executive power with a dual responsibility to the central and local government. This pattern is changing in France but is still prevalent in French-speaking African countries. The Indian model is unique. They are supposedly a separate institute of self-government,

but they do not have an independent functional and fiscal domain. In reality they are under total control of the state government. Nevertheless their integration in a vertical chain of administration is the weakest. Indian local bodies suffer from the negative aspects of both the British and French traditions.

4. The Location of executive as opposed to legislative Responsibility

The executive and legislative responsibility may be vested in an elected leader, the governor, the mayor, an administrator appointed by the central or local government, or the elected representatives who directly supervise their professional staff as a body.

5. The Extent of external Supervision

External supervision is particularly applicable to central or provincial governments concerning the approval of budgets, revenue tariffs, staff appointments, contracts and development plans.

6. Non-Municipal Authorities or Enterprises

Not all local governments have parastatal authorities or enterprises at a city level (as opposed to a national level). They can have three functions:

- Provision of specific urban services, such as water supply, sewerage or public transport;
- Comprehensive development of new areas for residential, commercial or industrial occupation;
- Metropolitan planning and development control.

Occasionally, a single authority performs two or all of these functions. The Karachi Development Authority, for example, is responsible for the master planning, the development of new areas and - until recently - bulk water supply.

7. Involvement of private Sector

The role of private and voluntary sectors in the provision of urban services varies per local government. In many cities private enterprises provide certain services, which are run by the public sector in other cities. Examples are public transport, medical services, nursery education and commercial refuse collection. It is also possible that responsibilities of the public sector are contracted out to private enterprise or voluntary bodies. Examples are garbage collection, road maintenance or the operation of sporting and other recreational amenities. Inputs to services can also be contracted out, such as architectural design or office cleaning. The involvement of the private sector in urban services has a long history and there is much interest in its expansion. Privatisation is seen as a device to eliminate public expenditures; alternatively, contracting out responsibilities is intended to reduce costs through competition or use of voluntary effort, while maintaining overall public responsibility.

Two features in this brief analysis have implications on information:

- Very wide variations between and within countries regarding the structure of urban or municipal governments and the allocation of responsibilities for individual urban functions;
- Considerable fragmentation of responsibility between levels of government, between general and special purpose authorities, between territorial jurisdictions and between public and private sectors.

Numerous attempts have been made to rationalise the institutional framework, extend municipal boundaries, amalgamate municipalities and superimpose metropolitan-wide co-ordination or planning authorities, amongst others. All such attempts meet institutional resistance, the reorganisations are very costly and few have yielded more than partial success. The differences of various local governments explain why the MIS needs to be adapted to the specificities of the governmental structure.

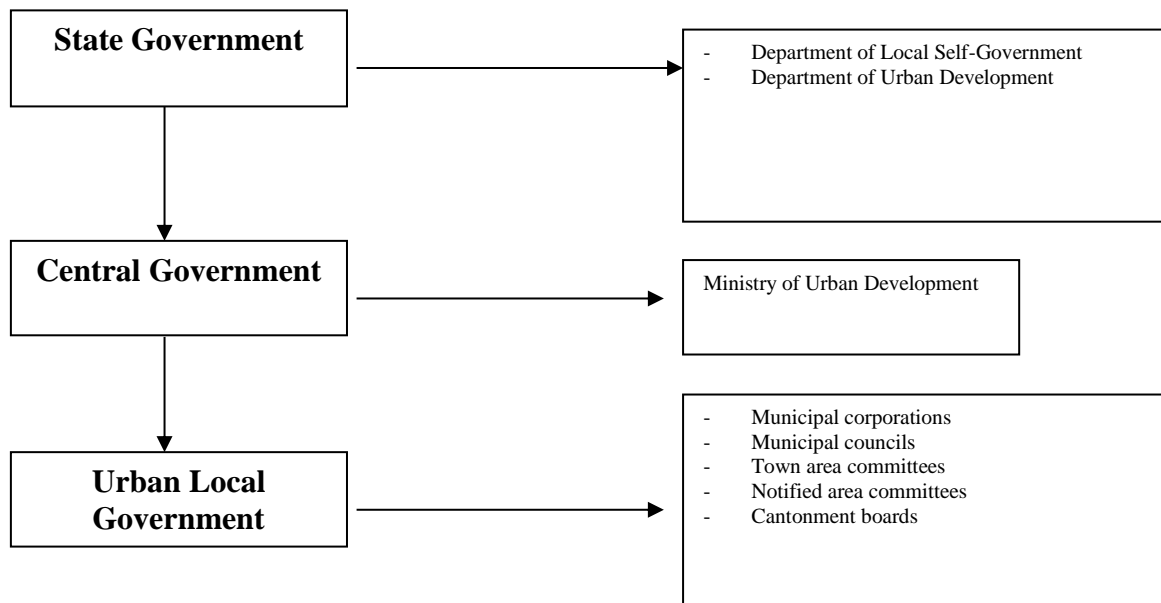
Legal & Administrative Framework of Indian Municipal Bodies

An urban local government in India comprises of municipal corporations, municipal councils, town area committees, notified area committees and cantonment boards. Municipal corporations of larger towns enjoy greater responsibilities and autonomy in decision-making than municipalities and other urban authorities. However, the tax powers of municipal corporations and municipalities are similar. Town area committees and notified area committees are involved with the development of specific areas, while cantonment boards come under the jurisdiction of the Ministry of Urban Development. A distinguishing feature of the urban local government in India is the absence of a tiered structure: only one single local authority operates in a given geographic area.

The Constitution (Article 246 (3) - Entry 5 of the State List) places the local government within the legislative competence of state governments. State governments therefore determine both the expenditure responsibilities and the revenue powers of municipalities. Consequently, there is a considerable inter-state variation in the functions, the structure of revenue, the system of state transfers and the sources of capital finance of local bodies.

At the central level, the Ministry of Urban Development is responsible for urban local governments. At the state level, usually either the Department of Local Self-Government - which is normally responsible for all local bodies - or the Department of Urban Development is responsible. State Governments delegate many of their powers of supervision and control to directorates of the Municipal Administration.

Figure 3.1 – Legal & Administrative Framework



Municipal Legislation generally classifies municipal functions into ‘obligatory’ and ‘discretionary’. Such a classification is not of much relevance today, given the paucity of municipal resources. The major functions that municipalities may undertake are:

- Public health and sanitation
- Water supply
- Drainage and sewerage
- Primary education
- Roads and public works
- Solid waste management
- Street lighting and cleaning

Some of these services are taken care of by the states, directly or through special institutions. In India, municipal responsibilities are subject to the doctrine of ultra-vires, so they can only perform functions specifically delegated to them.

The financial control of the state government over municipalities is more extensive than the power exercised through regulations on expenditures, taxation and loans. They influence the scope and form of reporting, budget approval, sanctioning of expenditure and the appointment of auditors. State governments can direct municipalities to modify their budget estimates. The control of state governments over individual items of municipal expenditures is also substantial: they must seek government sanctions through directorates of the Municipal Administration to estimate exceeding specified amounts. External audits of municipal accounts are normally undertaken by State Finance Departments through the examiner of local fund accounts.

Indian Municipal Government - An unaugmented Institution

William A. Robson made the following observation:

“In nearly all the leading countries the areas of local government were determined before the advent of modern improvements in communication; and in none of them there has been a systematic attempt to bring the size and shape of the areas into accord with the trend of social economic evolution.”

These words are still valid for the local governments in India. Even after more than 55 years of Independence, the local government system is the same as it was under the British Colonial Rule.

Besides the earlier mentioned models of local governments prevalent in developed or coloniser countries, there are various hybrids or truncated models in the erstwhile colonial countries. The colonial countries adopted models of a local government structure according to ideas of their colonial masters. As the transplanted of these structures could not take roots because of basic differences in socio-political soils, the growth of local government institutions became adhoc and ill-conceived, creating confusion on its operation and chaos in conceptual development. India is no exception to this process.

India was under colonial rules for a very long period. Even though local governments exist since ancient times, its present structure and style of functioning are still according to the British Colonial Rule. Many other countries that were subject to the Colonial Rule have restructured their local governments after Independence, in order to suit their historic and cultural ethos, traditions, polity and - more importantly - modern changing conditions.

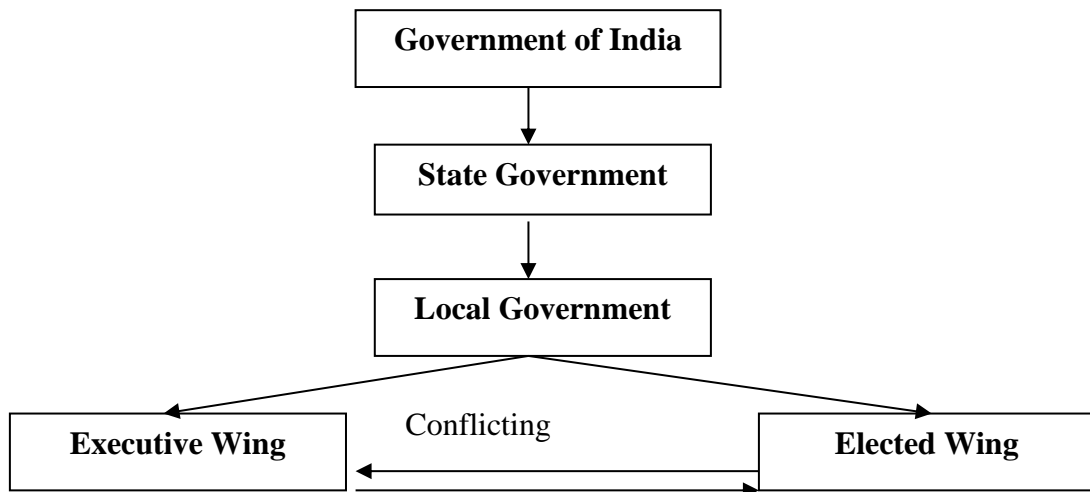
Would India immediately have adopted natural local government forms from their Independence, there would have been a crystallised political philosophy on local governments. Late Balawantrao Mehta did make an effort to restructure the rural local government. Except for the 74th Constitutional Amendment, the urban local government system has never been restructured or upgraded.

The Government of India and State Governments did appoint various commissions, committees and workgroups to analyse the existing system and to recommend suitable reforms. Unfortunately, the higher-level governments have hardly implemented any of the recommendations. Some recommendations were implemented with so much delay that by the time of implementation they had become redundant or outdated.

Time is changing very fast. Reforms and recommendations drawn on the basis of past and present situations become absolute if they are not implemented within a reasonable timeframe. A recent example is the 74th Constitutional Amendment. Even after seven years, the state governments have not implemented it in true letter and spirit. The net result is that we still have unaugmented rudimentary and financially weak local governments. We still have local governments with a colonial structure:

separate executive and elected (deliberative) wings, contrasting and conflicting with each other and virtually complete control of the state government regarding local government affairs. Higher governments have even created multiple agencies to take away functions of urban local governments, weakening them functionally. In other words, democratically elected governments in India have negated the philosophy of local self-governance.

Figure 3.2 – Governmental Structure



India still has the same local government system - with the same set of rather depleted resources - as Lord Rippon's Charter of Local Self-Government of 18 May 1882. Instead of devolving more resources to local governments, higher governments have taken away certain resources without providing them any adequate compensation, such as entertainment tax, motor-vehicle tax, profession tax and octroi. The post-Independence era is marked with many of such anti-local government and anti-urbanisation policies, which have created today's paradoxical Urban India. Macro-economic policies and future economic growth need well-conceived, structured and developed urban governance, but at the same time this is the most neglected sector of our polity, economy and society.

The local government system, which was a focal point of people's participation in an earlier phase of freedom movements, suffered especially after Independence due to a lack of people's participation. Again there is a paradox: people have high expectations of the local government, but at the same time they shun away from participation. A high percentage of the population in cities and metropolises still view local bodies as mere political bodies, and not as technical, administrative or development bodies. This perception needs to change; they need to be seen as locally established and citizen-responsive organisations that are able to perform important community functions and provide a forum for self-expression and leadership development.

Indian Municipal Bodies - Internal (Micro-Level) Complexities

Local governments in India suffered from the above-discussed macro-level inadequacies. Its reluctance, however, to improve or correct the administrative process, management style, working culture or to step up taxation - even in earmarked fields - is non-excusable. The fatal weakness lies in the unwillingness and incapability to upgrade internal or micro-level capabilities or to tap local resources, i.e. to collect taxes and to use resources cost-effectively, creating a quality of expenditure.

The following deficiencies within Indian municipal bodies need to be confronted and overcome in order to install a MIS:

- Even though the role of municipal bodies is expanding and changing at an informal or conceptual level, in reality most municipal bodies are reduced to mere maintenance bodies. As yet these bodies are not part of the nation's overall development.
- Municipal bodies have very weak planning capabilities. They have to deal with medium- and long-term planning and day-to-day crisis management or reactive management. Their planning suffers from the daily dynamic, in-flux and vibrant urban situation, just as the lack of adequate information management in the municipal bodies. Information forms the basis for any planning process.
- Municipal bodies have a very flat and illogical organisation structure, resulting in a wide span of management control.
- The division, decentralisation and delegation of powers are not judicious and appropriate.
- The major issue in introducing any reform in municipal bodies is staffing or human resources. There is no uniformity. In some states there is a separate municipal cadre; in others officers are deputed from various state government departments; in some states municipal bodies are allowed to recruit all the personnel including top-executives, except for the post of the municipal commissioner or the chief officer. The only thing they have in common is that the municipal bodies only recruit employees of class IV and some of class III. Nepotism still exists and recruitment, promotions and transfers are highly politicised matters. The recruitment rules and minimum qualifications are outdated. Municipal jobs are rated very low in the labour market and in the society. Therefore, only people who are not in position to secure any other job or who have other limiting factors join municipal bodies, causing a very low grade of professionalism. This attitude is improving, albeit at a very low pace.
- The motivation of municipal employees forms a serious problem. As municipal bodies have a flat organisation structure, promotion is a rare phenomenon. In many municipal bodies it takes more than 20 to 25 years to get promoted from a junior to a senior clerk. There is no 'vertical motivation' and - at the same time - there is an absence of 'negative motivation', like demotion or a loss of service due to inefficiency or indiscipline. The introduction of the time-scale promotion

system allows employees to have a higher pay scale after completing a certain length of service, even in the absence of a formal promotion or if still doing the same kind of work. These motivational distortions cause indifference and inertia towards the reforms and their work - aspects the MIS has to face.

- There is a lack of human resource development efforts. This concept is even almost absent in most of the municipal bodies: employees retire without receiving any kind of training during their service of (on average) 30 to 35 years.
- There is a problem regarding manpower planning, which is the number of employees and their allocated posts, departments and tasks. Since this assessment is not based on a scientific assessment of job and volume study, the result is excessive staffing in some departments, while there is a shortage in others.
- Municipal bodies get engrossed with a day-to-day reactive management. The dynamic urban situation and proximity to the people do not allow municipal bodies much time to reflex. As a result, municipal bodies have a more reactive than proactive working culture. Weak planning processes and the absence of proper information management result in more tasks, functions and responsibilities. Municipal bodies work as a 'crisis management' and for years they do one task after the other. Reactiveness and crisis management have become the hallmark of a municipal working culture or management style. Even simple matters are not dealt with in a proactive or planned manner and can get out of proportion. It is difficult to break this vicious circle.
- The municipal accounting system is very defective and unaugmented. It is merely a cash-based bookkeeping.
- There is no 'financial function' or financial management, but only a 'treasury function' regarding cash in- and out-flows.
- There is a pre-eminence of budget: the centre point of all operations. It is not a mere tool of financial management in the context of municipal bodies, but it is supposed to provide a legal base, a vision plan, policy guidelines, implementation strategies and it is supposed to be a tool for measurement and control of performance. At present it is the only formal source of information. In most of the municipal budgets, however, it has not kept pace with the time and has lost relevance. It only exists in a highly distorted and illegible form.
- Municipal bodies woefully lack performance measurement and control systems. There are no simple controlling systems and thus there is no ask for advance systems for manpower auditing, cost and efficiency auditing or social auditing.
- Due to the absence of a proper accounting system, financial management, and budgeting and controlling system, municipal bodies are characterised with wasteful expenditures.
- The information received and generated from various municipal operations is voluminous and highly diverse. A large part of it, which is very important on a

short-term basis, loses relevance as time passes by. Municipal bodies are required to take two types of decisions: reactive and pro-active decisions. Accordingly, there are also two types of required information. But the available time to process information in case of a reactive decision is very short. It is very difficult to segregate information into two categories, which is exactly the crux of the problem.

This list of internal deficiencies is not exhaustive, but only indicative. They have a developed self-existing interdependence with each other (nexus of a vested interest) and together they form inertia for any sort of modern reforms. Any reform efforts, especially those pertaining to information management, are viewed as a threat against the existing working culture, the establishment and the nexus of a vested interest. Municipal MIS reforms must overcome this.

Global changes have brought the Indian system of municipal governance under the attention to all the people, authorities and institutions concerned. It is the combination of macro-level and micro-level deficiencies that act as a stumbling block for meaningful ground-level reforms like MIS reforms. The dynamics of these external and internal issues need to be mastered in order to design and implement a successful MIS.

MIS in Municipal Bodies - Case Studies

Against this overall backdrop about the concept of local governments in general and in India in particular, including the external and internal complexities, two case studies were conducted in the municipal corporations Vadodara (Gujarat) and Navi Mumbai (Maharashtra) to investigate the status of MIS in municipal bodies. They are both well-known for their good management skills.

Vadodara City and its municipal body have a long evolutionary history, whereas Navi Mumbai City and its municipal body only exist recently: the city since 1972 and the municipal body since 1992. It is clear that two municipal bodies out of 4500 are not representative for the entire country, but they will give an idea of the existing situation and will validate the design of the model MIS formats in this manual.

Most of the MIS formats provided in this manual are the ones that were found in both municipal corporations. The formats were firstly observed, then documented, refined, restructured and updated in order to formulate the model MIS formats for ULB's. This manual does also show formats other than the ones used in our case studies, because they have been designed to bridge the gap between the existing information systems in Vadodara and Navi Mumbai and data formats.

As a part the study, the concerned officials in both municipalities were interviewed on the basis of a questionnaire. The outcomes will become clear in the following case studies.

1. In what form does your municipal body have a MIS? In case it is 'informal', do you think it should be made 'formal'?

2. Why should any organisation have a formal MIS?
3. Do you think information is necessary for decision-making? If so, how is information in your organisation being used in order to make decisions?
4. What is the procedure of receiving information from deputies?
5. How does information flow from one desk to the other?
6. How does information flow from one department to the other?
7. What procedure is currently followed to record and store information? What is the period in which information is generated, i.e. daily, weekly or monthly?
8. How is information scaled vertically between different hierarchies?
9. Do you think there is any other additional information that necessarily needs to be generated?
10. Are there any other suggestions that you would like to give in order to improve a MIS?

MIS in Navi Mumbai Municipal Corporation

Introduction

Navi Mumbai is a planned city: a counter magnet for Mumbai. It has been developed as an independent, fully self-contained metro city by the City and Industrial Development Corporation (CIDCO), a State Public Sector Undertaking registered under the Companies Act in March 1970.

The CIDCO prepared a developmental plan for Navi Mumbai, including 95 villages from the Thane and Raigad district that cover a total area of 343.70 sq. km. The Government of Maharashtra approved this plan in August 1979. The first years the city was managed by the CIDCO. Finally, in order to cater to the requirements of 29 villages in the CIDCO project and to 15 villages from the Kalyan notified area, the Navi Mumbai Municipal Corporation (NMMC) was formed vide Government - order dated December 17, 1991 – and came into existence on January 1, 1992.

The NMMC has an area of 162 sq. km under its supervision. The population of the city as per the census 1991 was 3, 97,000, which has increased to 7, 50,000 as indicated in the census figures of 2001 (a rise of 88.91 percent). For the purpose of administration, the NMMC has been divided into nodes: Belapur, Nerul, Vashi, Turbhe, Koparkhaine, Ghansoli, Airoli and Digha.

Each of these nodes is divided into groups, which are blocks of one or more sectors in each node. Every group is further subdivided into bits. The administration work is controlled on a bit-basis. Each bit has a supervisor who is required to ensure that all the facilities provided by the NMMC are in order. Similarly, there are 64 electoral wards in Navi Mumbai. A councillor is elected from each of the wards. The administrative bits are in one of the wards.

The NMMC consists of 13 main departments. For this MIS study, every department has been visited in order to understand its structure, functions and all the flows of information within the department, between various departments of the NMMC and across hierarchies. Either the Head of Department or an official from the

concerned department was interviewed, since they are the ones with an overall knowledge about the departments' operations.

MIS in Navi Mumbai Municipal Corporation

In the NMMC, every Monday the Municipal Commissioner and all Heads of Departments gather for a meeting. Each department provides a weekly report in a prescribed format, which is referred to as a 'MIS format'. These formats vary according to the department in terms of both number and the type of information provided. For example, the Medical Health Department has around 19 formats, which include a gamut of information: from the income and expenditure of hospitals and dispensaries, and the stock of equipment to the details of the causes of diseases or epidemics. The Department of Town Planning, the Property Tax Department and the Department of Encroachment only have one MIS format each. While the first two departments just provide financial data, the latter provides information in relation to its day-to-day operations.

It has also been observed that, even though a lot of information may not be included in the MIS, a detailed and well-classified record of the same is maintained within all departments. The Administration Department follows a filing system to store information. The files are classified as A, B, C and D, they are bound by cloths of different colours and contain the following information:

- A) Permanent records (red)
- B) Important records that are retained for 30 years (green)
- C) Records that are maintained for 5 to 10 years (white)
- D) Temporary records that are maintained for one year (yellow)

The NMMC has 16 different departments. If applicable, the MIS formats, the flow of information and the storage of information will be discussed per department.

1. Administration Department

The main function of the Administration Department is the management of the Human Resources in the organisation. This includes recruitment, training, capacity building and punishment in case of non-performance.

- **MIS Formats**

The Administration Department has three MIS formats. One format is a simple record of the work done during the week; the other two give the status of various types of references such as government letters, letters from the mayor and deputy mayor and letters from the councillors. While one of these formats is the Administration Department's status of references, the other format contains the consolidation of the status of various references for all the departments of the NMMC. Apart from this, information on various details of employees such as personal information, salary details, provident funds, loans and advances, and leaves are incorporated in the 'Personal Information System', which is maintained by the Accounts Department.

2. Encroachment Department

The Encroachment Department keeps track of illegal constructions in Navi Mumbai and takes necessary actions.

- **MIS Formats**

The Encroachment Department has one MIS format, containing information like the number of unauthorised constructions, the number of notices issued, demolitions, recovery from hawkers and fines for posters and hoardings.

- **Flow and Storage of Information**

Information is generated weekly and monthly. It may even be generated on a daily basis if required. For example, if action needs to be taken in a case that concerns hawkers, daily feedback is required from field officers to plan the requirement of manpower, machines etc. Similarly, a monthly record is maintained about actions taken during the month and they are reported to the Commissioner daily. The information is stored in the form of specified formats, inspection reports and notices. These formats and notices are stored in files, which are classified month-wise and year-wise. This system is not very efficient.

3. Medical/Health Department

The Medical/Health Department holds the responsibility of checking the spread of epidemics in the region of the NMMC. They also take effective measures to control and eradicate malaria and waterborne diseases. The spread of health education also falls under its preview. Health Services in Navi Mumbai include hospitals and clinics of every possible kind: allopathic, homeopathic, ayurvedic etc.

- **MIS Formats**

The Medical/Health Department generates around 19 MIS formats that cover a wide range of areas:

1. Annual income of Health Department
2. Comparative report - Family planning
3. Comparative report - Immunisation
4. Comparative report - Malaria
5. Chart of dengue patients in city
6. Report on mosquito mass
7. Report on mosquito larvae mass
8. Revised national tuberculosis contract program
9. Comparative report on inspection of water samples
10. Comparative report on communicable diseases
11. Monthly birth registration report
12. Monthly death registration report
13. Stock position of instruments, pathology tools/chemicals,

- medicines
and balance stock in central store
14. Medical health expenditure
 15. Expenditure on medical services
 16. Capital expenditure
 17. Administrative expenditure
 18. Monthly report on general hospital, Valhi
 19. Comparative report on Medical/Health Department

- **Flow of Information**

The information flow within the department is as per hierarchy. The ward officers send a monthly report to the Medical Officer of Health (MOH). If any report needs to be sent to the Government, the MOH asks for the consolidation of the work to the Family Welfare Officer. The preparation of the report at the grassroots level is the responsibility of the Assistant Matron, who in turn passes it to the Assistant Health Officer (AHO). The Family Welfare Officer receives the report from the AHO and finally hands it to the MOH.

- **Storage of Information**

Various kinds of information are stored and updated through the MIS formats. Besides, there are other agencies that prescribe formats for various schemes, giving details of the operation of that scheme, such as the National Child Survival and the Safe Motherhood Program. The storage of information depends on the function. Weekly reports are sent to the management. In case of family planning and immunisation, reports are sent monthly.

4. Public Health Engineering

The Public Health Engineering Department is entrusted with the following functions:

1. Solid waste management – urban and rural
2. Operation and maintenance of sewerage line
3. Operation and maintenance of sewerage pump
4. Construction of new public toilets
5. Repair and maintenance of public toilets
6. Maintenance of dumping grounds
7. Putting up new dustbins and repairing old ones
8. Cleaning sewer line

- **MIS Formats**

This department uses two MIS formats, which only contain the financial details of the department: details of the Account Heads' expenses and the income and expenditure. There are no MIS formats that outline the specific functions of this department.

- **Flow of Information**

No particular format is being used to receive or pass on information. Information flows through letters. Usually, the original letter that comes from a municipal councillor - demanding the undertaking of a certain work - circulates between different authorities who write their comments on it.

Reports are brought out as and when the General Assembly or the Government demands it. The basis of these reports is the Assessment Register. There is another register, which is called the Budget Control Register. The budget sanctioned under each item head is noted, i.e. the budget head, provision, expenditure and balance are noted down. As and when any expenditure is incurred, it is deducted from the provision made under that head.

- **Storage of Information**

A register called the Assessment Register is maintained. As and when a new work is undertaken, details will be added. For instance, when making a sewerage line the length, size and actual expenditure will be added. Separate Assessment Registers are maintained for different kinds of works such as public toilets and drains. These registers are useful to estimate the property of the Municipal Corporation. It also serves as an important document for the maintenance and cleaning of roads, drains etc.

5. City Engineering Department

The City Engineering Department undertakes construction activities of the NMMC. Constructions of roads, bridges and municipal schools are the main construction activities. The two main sub-departments that fall under the purview of this department are the Water Supply Department and the Electrification Department.

- **MIS Formats**

Reports are being sent to the Municipal Commissioner every week. There are three types of MIS formats:

1. Status/Action on Grievances; this is generated through the monitoring of proposals, correspondence letters from the public representatives and resolutions passed in the General Body and standing Committee.
2. Work Process; this shows the approval status of proposals, i.e. whether the work order has been issued.
3. Ongoing Works/Work in Progress; if the work order is issued, the status of the work is mentioned in this document.

- **Flow of Information**

Within the department, information generally flows through the following hierarchy: each ward has Junior Engineers, who report to the Deputy Engineer of that respective ward. The latter then reports to the Executive Engineer. There

are four Executive Engineers: two for civil works, one for the water supply and one who is in charge of electric work. The Executive Engineers report to the City Engineer.

- **Storage of Information**

The filing system is to store data. A computerisation process is currently taking place.

6. Water Supply Department

The NMMC does not have an independent source of water. Treated water is taken from the Maharashtra Industrial Development Corporation (MIDC) and the Maharashtra Jeevan Vikas Pradhikaran (MJP). After checking for residual chlorine, chlorine is added to the storage tanks if necessary. This water is distributed to the NMMC area. The main functions of the Water Supply Department are operations and maintenance (including grievance redressal) and the provision of new pipelines.

Each of the four Deputy Engineers is assigned to different committees:

A	Committee (Belapur & Nerul)
B	Committee (Turbhe & Vashi)
C & E	Committee (Koparkhane, Ghansoli, Airoli and Digha) Head Office (Capital Elevated Storage Reservoir, Ground Storage Reservoir)

There are two to three Junior Engineers reporting to each Deputy Engineer. There are two Sectional Engineers who directly report to the Executive Engineer. One Sectional Engineer deals with works related to bills and the other with feeder lines related works (MIDC and MSEB).

The Water Supply Department provides just one weekly report, which consists of actions taken on references, i.e. letters etc. Actually all departments provide this information. It does not have any separate MIS format pertaining to its operations. The works may be included in the MIS formats of the City Engineering Department.

7. Education Department

This department is responsible for the following functions:

1. Establishment of new schools
2. Giving permission to set up new municipal and private schools
3. Establishment of teachers
4. Transfer of teachers
5. Inquiry of teachers
6. Conducting examinations
7. Admissions

- **MIS Formats**

There is just one format, which mainly includes the expenses incurred and the total beneficiaries of the various services provided by the department.

- **Flow of Information**

The flow of information takes place through letters, messages and telephone calls. Sometimes formal formats are used: if, for example, a new school has to be established, the proposal must be given in a particular format.

- **Storage of Information**

The information is stored in the computer and is regularly updated. Certain information, such as the number of dropouts, gets recorded at the end of the year. This information is of vital importance for the Education Department. Information about teachers, salary, provident funds, complaints, suspensions, examinations etc. is also recorded. Similarly records about the establishment, such as school buildings, are also maintained.

8. Property Tax/Assessment Department

This department is concerned with the assessment and collection of property tax, issuing notices and taking necessary action in case of default.

- **MIS Formats**

The department uses just one MIS format, which is the Comparative Statement, and shows the month-wise recovery of Property Tax between the current and the previous year.

- **Flow of Information**

Reporting is done in the form of for example bills and notices. The tax inspectors who work at ward levels are responsible for the assessment of tax for constructed property and change of user, collection of taxes and action against defaulters. They report to the ward officers. The ward officers report either directly to the HOD or to the Assistant Assessor & Collector, who on their turn report to the Deputy Assessor & Collector. The Deputy Assessor & Collector submit the information to the Commissioner.

- **Storage of Information**

Information collected by the tax inspectors is entered into the computer where calculations take place and a property tax bill is generated. The information is generated daily.

9. Town Planning Department- Construction Works

The Town Planning Department issues Commencement Certificates (CC) to start the construction of a building, after having compared the construction plans with the Development Control Rules. After the construction is completed and only if confirmed that it satisfies all conditions, an Occupancy Certificate (OC) is issued. The planning of city survey (Gaonthan) areas, the planning of roads, gardens, cemeteries and social welfare centres all fall under the responsibilities of this department. The CIDCO does the planning for nodes but it is bound to take the permission of the NMMC.

- **MIS Formats**

The Town Planning Department uses two MIS formats. The recovery report compares the previous month with the current one. Another format contains information about the number of Occupation Certificates and Completion Certificates (CC) given during the month. However, this format was not available at the Administration or Town Planning Department

- **Flow of Information**

The reporting structure is as per the hierarchy.

- **Storage of Information**

When a CC is issued the record is stored by filling the required information as per the various predefined fields. All these records are stored in different files in the computer. If the store file number is entered, the information stored in these files is generated, such as the plot numbers, the number of permissions given for commercial constructions and residential constructions, available Floor Space Indexes etc.

10. Accounts Department

The reporting takes place as per the hierarchical structure of the department. The CAFO hold the highest position in the department, followed by two Accounts Officers who report to the CAFO. There are two Assistant Accounts Officers who report to the Accounts Officers or directly to the CAFO. The clerks and deputy Accountants report to the Assistant Accounts Officer.

- **MIS Formats**

There are two MIS formats, which report the department's income and expenditure respectively.

- **Storage of Information**

The classification of records is done as per a Government Regulation Classification of Records. The PIS formats store information such as personal details, salary, benefits, leaves and advances of all employees of the NMMC.

11. Dy. Municipal Commissioner (Wards)

The main function of this department is to implement various welfare policies of the government, such as the *Suvarna Jayanti Shahari Rozgar Yojana*, and to formulate various developmental schemes that are initiated by the NMMC itself. The department also regulates the use of various NMMC spaces such as *Samaj Mandirs* by different organisations. The reporting structure is as per the department's hierarchical structure.

- **MIS Formats**

This department has three MIS formats: the income of the department, the weekly report on the departments' expenditure on different policies and, finally, the monthly report on the departments' expenditure on different policies.

- **Flow of Information**

When an application is received for the use of any scheme, it is sent to the Deputy Municipal Commissioner (DMC) to be signed. If the DMC is not available it is sent to the Assistant Municipal Corporation (AMC). As per the subject, the Office Superintendent (OS) sends it to the official responsible for the implementation of the scheme.

In case an organisation applies for the use of a public place such as a ground or *Samaj Mandir*, the applicant organisation is expected to attach the description of its work and registration certificate to the application. The General Assembly has set different criteria, terms and conditions regarding the leasing of different facilities. When the application comes to the concerned official, it is processed to see if it satisfies the necessary terms and conditions by checking the nature of the work, the location, its registration etc. In case of any doubt, a letter is sent to the concerned ward officer, informing him about the application. The ward officer inquires about the organisation and replies to the department. If the application is considered suitable, the social worker/officer-in-charge forwards the application to the OS. The OS sends it to the AMC, who sends it on its turn to the DMC. Only in case the lease is for eleven months, the DMC adds his comments and the file goes to the Commissioner. If the lease is for five years, the officer-in-charge prepares a proposal for discussion in the General Assembly. This proposal is sent to the commissioner for signature, after which it is sent to the Municipal Secretary who puts it on the agenda for discussion. The proposal contains the list of all organisations and the places applied for. If the General Assembly sanctions it, it goes to the department. The applicant organisation has to pay a deposit of one year and a rent of Rs 200/-. The agreement requires the certification of two standing committee authorities.

- **Storage of Information**

Certain basic files are prepared of various subjects such as a gymnasium, a *Samaj Mandir* etc. If the application is related to any of these files, it is filed in that file or otherwise a new file is prepared.

12. Department of Cess

The functions of the Cess Department are similar to octroi. When goods are brought in the area of the NMMC, the traders have to deposit cess within a period of 45 days at a prescribed rate that depends on the quantity and nature of the goods. This department is responsible for the assessment and collection of cess in Navi Mumbai.

- **MIS Formats**

The Cess Department has three MIS formats: octroi details, a revenue collection compared to the collection for the month in the previous year and a comparative report of the recovery for the current and previous year.

- **Flow of Information**

Sixteen Cess Inspectors are located at the Central Office. They are responsible for serving notices, the search for defaulters and unregistered dealers. They report to the Cess Officers. The Cess Inspectors act as an assessing authority. They certify whether the cess credited is adequate or not. They are also given responsibility of different wards. There are nine Cess Officers assigned to nine wards. The Cess Officers report to the DMC, who on its turn reports to the Municipal Commissioner.

- **Storage of Information**

The storage of information is done through filing. Each file has assigned codes such as 01, 02, 03 ----- 09. Each code corresponds with a different ward and has various sub-numbers that correspond with different dealers within that ward. Separate files are maintained for each dealer with information about the name, address and time of commencement of business, property tax returns filed by citizens and assessment records. Every week banks submit statements of the cess revenues received. Separate records about the overall collection of cess are also maintained.

13. Transport Department

The Department of Navi Mumbai Municipal Transport (NMMT) started in 1996 with 25 buses. Currently there are 176 buses running on 24 routes and cater to 1, 66,000 passengers a day. The Turbhe depot is where the co-ordination takes place. Two more depots are being established. The main function of the department is to smoothly run this bus service in Navi Mumbai in an efficient and economical way. The department also introduces welfare schemes such as a subsidy of 50 percent to students, a free pass for freedom fighters and journalists, and a nominal fee for blind passengers.

- **MIS Formats**

There are four MIS formats. There is comparative information on the revenue earned from the sale of tickets and passes. There are reports regarding for example the revenue earned, vacancies, the number of kilometres travelled and the diesel consumption of the Navi Mumbai Transport project, Turbhe. Then there is the weekly

comparative statistical report and, finally, the report on the income of a transport project, the number of passengers and surcharge and tax.

- **Flow of Information**

The reporting is not necessarily done as per hierarchy. If the Transport Manager requires certain information, the concerned sub-department - not necessarily the Head of the Sub-Department - should be contacted. Once local area network (LAN) is installed, information can be accessed directly through the computer. Communication is undertaken through the *Vibhagiya Patra*. This is an official letter in a prescribed format that is used for correspondence between the sub-departments.

- **Storage of Information**

Information about the route-wise sale of tickets, denominations of tickets, the daily income from each route, the kilometres travelled and diesel consumption are maintained. The calculations and the storing are done manually. There is a separate department of the NMMT that deals with passenger complaints.

14. Fire Department

Currently there are three fire stations: Vashi, CBD and Airoli. Apart from the primary function of extinguishing fire, the Fire Department also undertakes other related functions such as:

1. Freeing individuals caught in locked or latched houses
2. Removal of trees that may pose danger
3. Catching snakes and monkeys
4. Intervention in case of road accidents
5. Taking necessary action in case of oil spills on roads
6. Gas leakage
7. Demonstration in high-rise buildings and undertaking awareness programs

- **MIS Formats**

The Fire Department uses three MIS formats:

1. Annual report of department's revenue
2. Monthly report of total progressive income
3. Report containing emergency calls received, action taken and the type of casualties

- **Flow of Information**

The information flows in a formal manner through circulars according to the internal organisational structure of the Fire Department. Currently the posts of the Sub-Fire Officer and Station Officer are vacant. Therefore the Leading Fireman directly reports to the Deputy Fire Officer.

- **Storage of Information**

Information is updated weekly. A weekly report is sent to the Commissioner. This report contains the name of the fire brigade centre, the date, the number of vans sent in response to calls, the time of departure and arrival of the vans, the address of the call, details of the call, the number of deaths, injured and destruction that has taken place.

Besides this, a register named the Occurrence Book is maintained where all emergency calls, internal staff activities and infrastructure changes are noted. Examples are electricity failures and visits of a station officer. The emergency calls are noted in red. Emergency calls are classified as:

1. Fire calls (e.g. short circuit)
2. Other service calls (e.g. opening of latches)
3. Accident calls (e.g. road accidents)
4. Emergency calls (e.g. gas leakage)
5. Rescue calls (e.g. catching snakes, saving a drowning person)

When receiving a call, the name, address and phone number of the caller is noted down. The details of each call, the action taken and the casualties are entered in a prescribed form. In case of smaller emergencies, such as a short circuit, a simple circular is drawn.

15. Public Relation Department

This department coordinates between the NMMC administration, councillors, the press and the citizens. It collects reports, which have appeared in the newspaper and in other mediums with respect to – in favour of or adverse - the NMMC. It forwards them to the Commissioner or the relevant departments and in the end files the same. It also handles various functions and programs of the corporation, like naming roads, inaugurating buildings and taking care of protocols during such functions. It meditates in case of morchas (rallies) and campaigns to take their demands to the commissioners. It informs people about schemes and policies of the NMMC. The magazine "Sattat Sampark" reflects all these policies.

- **MIS Formats**

No MIS formats are prescribed for or used in this department.

- **Flow of Information**

One newsreader is responsible for keeping the cut-outs of all relevant newspaper articles. These cuttings are daily submitted to the HOD of the Public relations Department. The HOD sends these cuttings to the Commissioner. After the Commissioner's comments and other proceedings, a clerk in the Public Relations (PR) Department files them. Separate monthly files of the articles are prepared.

- **Storage of Information**

A database is maintained. The press reports are typed and filed. The press reports are retained for three years and are then destroyed.

16. Computer Department

The NMMC is currently in the process of implementing a formal, computerised scientific MIS and installing customised computer software. This is because the amount of computerisation that has taken place differs from department to department in the NMMC and there is no compatibility between two departments. For example, the Accounts Department has installed a detailed computerised 'Personnel Information System'. This system has considerably reduced paperwork to the minimum as far as salary; salary related monetary matters and other details with respect to human resources are concerned. The Transport Department, however, does not have much computerisation. As a result a number of calculations, such as the earnings per kilometre, are still inserted manually.

- **MIS Formats & Flow of Information**

Because of the proposed computerised MIS, the Computer Department of the NMMC will become focal point of the NMMC MIS. At present, however, there are no MIS formats or much of a flow of information from or to the Computer Department.

MIS in Vadodara Municipal Corporation (VMC)

Introduction

As mentioned before, the city of New Mumbai and the NMMC have a very recent origin, whereas the city of Vadodara and the Vadodara Municipal Corporation boast a history of centuries. The city of Vadodara dates back to the 6th century B.C. and the municipal body of Vadodara dates back to the 19th century (1850). The municipal body of Vadodara has chequered history of more than 100 years and it elevated to the status of Municipal Corporation in 1966.

As per 2001 census, the population of Vadodara is 1.305 million, whereas this was 1.031 million in 1991. The Vadodara Municipal Corporation has 10000 employees against a sanctioned strength of 12500 employees. One of the greatest achievements of the VMC is the control over recruitment and staff related expenditure. In 1989 it had more than 14000 employees. In the last 15 years the VMC has not only controlled the increase in staff strength but has actually managed to bring it down through an improvement in employee productivity, system automation and a selective contracting out of various activities.

The Municipal Administration is mainly divided into a Central Administration and a Zonal Administration. For the Zonal Administration purpose Vadodara is divided into four zones and ten wards. Two zones comprise three wards each, while the other two zones comprise two wards.

For election purpose Vadodara is divided into twenty-six election wards and each election ward elects three councillors for the period of five years, which makes seventy-eight councillors in total. Administrative wards and election wards have been made geographically co-terminus to each other. Each administrative ward includes either two or three election wards, having six or nine municipal councillors.

In order to document this case study, various heads of department were interviewed. As the author has worked for twenty years in the VMC in different capacities, he has an in-depth first hand experience of the MIS in the VMC. This manual and the model MIS formats provided herein are based on this rich experience.

1. General Administration Department

This department is headed by a Dy. Municipal Commissioner and below him by an office superintendent. As usual this department looks after the entire gamut of human resources of the VMC, like recruitment, placements, promotions, transfers, retirement, penalty proceedings and union matters. The other branches under its responsibility are amongst others the central record, apprentice, legal issues, elections and census.

- **MIS Formats**

There is no formal MIS system or there are no formats associated with this department.

- **Storage of Information**

Extensive records of quite a good quality are kept and an information statement is prepared as per requirement either for a municipal commissioner or for a councillor.

2. Zonal/Ward Offices

Vadodara City is divided into four zones and ten wards. The VMC has carried out a very good administrative decentralisation. A zone is headed by a Dy. Municipal Commissioner, who is supported by an Assistant Municipal Commissioner for recovery and general administration and sanitation. The Assistant Municipal Commissioner on his turn is supported by an executive engineer for engineering works. The ward office is headed by a ward officer, who reports to the Assistant Municipal Commissioner and is supported by a recovery officer and a sanitary inspector. Each ward has two deputy executives.

- **Flow & Storage of Information**

The largest part of the MIS of the VMC is centered on zones and wards, as these departments deal with most of the people's day-to-day problems. The flow of information takes place on a daily, weekly or monthly basis through a MIS system or formats. All formats undergo frequent changes.

The following information flows from Ward and Zone Offices to various central departments like the Municipal Commissioner's Office, the Central Computer Department and the Accounts Department:

1. Daily ward-wise collection statement to Accounts Department, Commissioner's Office and Central Computer Department
2. Daily solid-waste collection/sanitary work report
3. Daily complaints redressal report
4. Daily wage workers and absentee of regular employee report
5. Monthly detailed report about issues like tax arrears, demands, a total collection of fines recovered, properties ceased and cutting of water-

drainage connections. This is sent to the Commissioner's Office for a monthly review meeting

6. Wards & zones carry out small capital works over and above maintenance works. A monthly report is prepared about the total number of works sanctioned, works under implementation, works completed etc. for an engineering works review meeting, which is chaired by a Municipal Commissioner

3. Accounts Department

This department looks after the pension administration, provident fund accounts, income tax and other deductions, besides keeping the accounts and the financial management.

The VMC has introduced a computerised, accrual-based double-entry accounting system. Before that they had a very good traditional government accounting system. The budget document has always contained well-thought out and analysed information that served as a statistical abstract. Since 1998 the Accounts Department of the VMC is bringing out the statistical abstracts separately in an additional budget document. Apart from the zones and wards, the Accounts Department constitutes a major part of the MIS in the VMC and is highly advanced.

- **Flow of Information & MIS Formats**

This department prepares different information statements: some on a daily basis, others weekly, monthly, quarterly or yearly. Even though it uses standardised, well-structured MIS formats and recordings of information, there is no formal system of information flow. Only one statement that shows consolidated receipts and the payment situation is submitted daily to the Municipal Commissioner. The rest of the statements are prepared as per requirement or at the end of year, as a part of a system without intention or requirement to submit it to anyone.

4. Tax Assessment Department

This is a central department and undertakes the assessment of properties for taxation purpose. It also deals with tax objections and appeals.

- **MIS Formats**

Two MIS formats are utilised:

1. Monthly report on number of properties assessed and yet to be assessed, number of employees utilised etc.
2. Monthly statements about assessment objections and appeals received and cleared. Additional information is prepared as per requirement.

- **Flow of Information**

The flow of information in the Tax Assessment Department takes place in three directions. The first direction is upwards to the Deputy Municipal Commissioner, the Head of Department and the Municipal Commissioner. The second flow is horizontal to the Central

Computer Department in the form of an increase/decrease in assessment and additions of newly assessed properties. The third flow about the assessed value of properties goes downwards to the Ward Offices.

- **Storage of Information**

This recording of information is meticulous from the beginning. Recently this department has been computerised and it has improved its recording of information considerably.

5. Octroi Department

The Octroi Department is headed by an Assistant Municipal Commissioner. This department oversees the entire operation of octroi collections. The VMC has computerised its records of octroi-collections.

- **MIS Formats**

There is one MIS report about the daily octroi collection and is sent to the Commissioner's Office. This format also provides various comparative figures like the previous day collection, the total collection till date during the current year or the previous year.

- **Flow & Storage of Information**

The flow of information takes place from individual check-posts to the Central Office of the Octroi Department and from there to the Municipal Commissioner's Office, Dy. Municipal Commissioner's Offices and the Accounts Department. Records about octroi collections are maintained octroi-check post-wise and item-wise. Information is also maintained transport-wise.

6. Town Planning and Building Permission Department

This department is headed by a Town Planner who is assisted by a Town Planning Officer and a Building Permission Officer of executive engineer ranks. One section of this department prepares the town planning schemes for balanced and planned development of the city, while another section oversees the regulation of building construction activities as per development control rules.

- **MIS Formats**

There are no stipulated MIS formats for this department. Information is submitted on a regular basis. It is prepared and submitted in a customised form as and when it is asked for.

- **Flow & Storage of Information**

The flow of information takes place between field level Building Inspectors and citizens, in the form of complaints and the submission of building plans. Record keeping is very good and recently it is in process of computerisation.

7. Land and Estate Department

The quality of the record keeping is not up-to-mark and computerisation has hardly taken place. There is hardly any information flow and no stipulated MIS format or time duration for the submission of information.

8. Audit Department

The Bombay Provincial Corporation Act of 1949 provides for the Independent Audit Department to be headed by the Chief Auditor. This department carries out the pre- and post-audit of all transactions, receipts and payments of the VMC. The Chief Auditor and the Audit Department work under a council or standing committee.

- **MIS Formats & Flow of Information**

The flow of information in the form of audit reports takes place as per the provisions of the Act and the audit rules adopted by the VMC. These reports are placed monthly to the council through a standing committee. During the monthly meeting of Municipal Commissioners, the pending audit para position from each department at that instance - including the Audit Department - are being reviewed. They also submit information on pending audit paras. Apart from this there is no regular MIS format for the Audit Department.

- **Storage of Information**

The quality and systems of the recording is good but there is no computerisation.

9. Municipal Council/Secretary Department

This department is headed by a Municipal Secretary and looks after all the activities, meetings, proceedings of the council standing committee and other committees.

- **MIS Formats**

There are no MIS formats prescribed in this department.

- **Flow & Storage of Information**

The records are kept about meetings held, the attendance of members, decisions taken etc. The flow of information takes place in the form of questions, required information, complaints or suggestions made by councillors, and resolutions taken in the council or other committee meetings.

10. City Engineer and Additional City Engineer's Office

Both offices essentially carry out the co-ordination work of all Engineering Departments. As shown in the chart each City Engineer is supported by four Executive Engineers, one Executive Engineer (zone) and an Assistant Municipal Commissioner (zone). Both are involved in policy making and planning of the works of independent Engineering Departments.

- **MIS Formats**

There are no MIS formats prescribed for both offices.

- **Flow & Storage of Information**

The flow of information takes place in two ways. Each department works under the city and an additional City Engineer sends performance and other reports. This will be discussed below as per department. Secondly, both offices send compiled information to the Municipal Commissioner's Office. The quality of record keeping is good.

The various Engineering Departments and their present MIS are as follows:

A. Water Supply Department

This department is responsible for the water supply of the city. In total 65 mgd water is supplied to the city.

- **MIS Formats**

Though information gets recorded, it does not reach the higher level daily or there is no standard prescribed format or formal procedure. It is only in times of crisis, heavy rains, breakdowns or water shortages that information gets monitored regularly at a top level. In all other cases the operational level staff monitors the data and the situation.

- **Flow of Information**

The flow of information takes place from the source and various distribution points of water supply. This information gets compiled at the Water Supply Department's Central Office and is sent to the City Engineer's and Municipal Commissioner's Office.

- **Storage of Information**

The quality of record keeping is good and records are being kept on the total drawl of water from its source, pump working hours, the water treated and supplied to the city or various areas of the city etc.

B. Sewerage Department

This department looks after the waste water collection, treatment and discharge. Vadodara is one of the few cities that has an underground drainage system that entirely covers the city since the beginning of the twentieth century. Today it has a 100 percent treatment capacity – the highest of all Indian cities.

- **MIS Formats**

There is an absence of systematically designed MIS formats. Only occasionally information about sewerage services gets reviewed at the top management level.

- **Flow of Information**

The flow of basic information takes place from six sewage treatment plants and twenty-seven pumping stations to the central office of the Sewerage Department.

- **Storage of Information**

The record keeping is good for short-term (day-to-day) information, but it is not maintained on a long-term basis in an analysed manner. There is no computerisation in this department.

C. Electrical-Mechanical Department

This department works in tandem with the Water Supply and Sewerage Department. It looks after all electrical and mechanical installations. Records are kept about electrical consumption, repairs and replacements. There is no computerisation of records. There are no prescriptions for MIS formats.

D. Roads Department

It looks after the development and maintenance of roads and road-related infrastructures. There is no computerisation, hardly any record keeping and there are no MIS formats prescribed.

E. Storm-water Drainage Department

This is a separate department but it is unstable, as it occasionally gets clubbed with the Road Department. It looks after constructions and the major maintenance of storm water drains. This service does not receive due importance in the VMC in terms of review and allocation of funds. There is no computerisation of operations or record keeping. No MIS formats are prescribed for this service and, consequently, there is hardly any information flow.

F. Public Housing and Building Department

This department undertakes the construction of houses for people of the lower income groups (LIG), economically weaker section (EWS), and below poverty line (BPL) category. In the past it constructed houses for higher- and middle-income groups. It is also responsible for the construction and maintenance of VMC's buildings (offices and services).

This department also functions in a conventional way. There is no computerisation of operations and record keeping in this department. There are no prescribed MIS formats for regular internal reviews. Only if any housing project is going on, occasional reviews are undertaken about the working progress, information gets prepared and will be submitted in a customised format.

G. Central Store Department

There is a post-store Superintendent (class: II rank), but in actual practice the Superintendent and the department are always placed under one of the Executive Engineers (class: cadre I), who takes the importance of the department into account. This department is responsible for most of the purchases and administration of the VMC.

The Central Store Department has been computerised only recently. The past records regarding purchase and stock are maintained very well, but an analysis of past data and its immediate retrieval is lacking. Occasionally, the stock or purchase position gets reviewed at the Commissioner's or City Engineer's level. As a result, formal MIS formats have not been prescribed for this department and thus there is hardly any flow of information.

H. Vehicle Pool & Workshop Department

This department is headed by an Executive (mechanical) Engineer. The main function of this department is to take care of all types of vehicles (250 in total) that are owned by the VMC. It also undertakes basic repairs and maintenance of all types of vehicles. This department also handles the purchasing of new vehicles.

There is no computerisation of the operations. Records regarding all kinds of fuel used are kept well in an analytical though conventional way (not vehicle-wise). Simple formats and an information flow exist within the department - at the most - up to the Executive Engineer level. There are no prescribed MIS formats and hardly any performance review takes place at the Commissioner's or City Engineer's level.

I. Streetlight Department

This department oversees all the operations pertaining to the provision and extension of the streetlight service in the city. It is headed by an Executive Engineer.

There is no use of computers. Records are maintained but as there is no MIS developed for this department, they are maintained without any specific objectives or focus. Every day a flow of information takes place between bottom-level Field Supervisors about the number of working or non-working streetlight points and action taken. But the service does not get reviewed at the very top-level by a Commissioner or City Engineer.

J. Solid Waste Management Department

In reality, a separate Solid Waste Management Department does not exist. This service is being handled by a different department. Sweeping and solid waste activities are being carried out by ten ward offices, while transportation is handled by the Zonal Office and Vehicle Pool Department. The waste disposal (landfill sites, compost plants) is handled by one of the Executive Engineers. Usually this charge is clubbed with the Executive Engineer-in-charge of vehicle pools and workshops.

- **Flow & Storage of Information**

Since the work arrangements are divided, the information flow is also fragmented. Data on for example garbage collection, formal and informal collection points, and absenteeism get recorded in Ward Offices; data on transportation gets stored in zones and at the Vehicle Pool Office. Similarly, data on garbage disposal get stored at the Executive Engineer's Office that is in charge. There is no computerisation of operations and record keeping of solid waste. Since retrieval is not easy, information gets recorded without any specific objective and analysis.

- **MIS Formats**

There are no prescribed MIS formats or there is no system of regular information flow.

K. Health Department

This department is responsible for the maintenance of adequate standards of public health in the city. It involves heterogeneous activities, ranging from general health administration and regulation (issuing health licences and checking food adulteration), immunisation and child development, to family planning. A Medical Officer of Health heads the department.

Public health is a part of various national and state level programs. There are MIS formats prescribed by National and State Agencies. In order to submit this data various records and data are maintained in an efficient and orderly manner. Although data are well maintained and get reported regularly to national and state governments, internally they are not utilised very often. There are no prescribed formats for an internal MIS or review. There is hardly any computerisation and record keeping.

L. Gas Project

The VMC manages the unique service of supplying natural gas through pipelines. Set up in 1974, it was the first service of this kind in Asia and right from the beginning it has been run professionally on a 'no-profit no-loss' basis. At present it provides a gas supply for up to 60,000 consumers, 24 hours a day.

The project has a good recording system. In the past couple of years it has adopted a computerised Accounting and Billing System. There is no well-developed MIS system and hardly any information flow and review.

M. Garden Department

Vadodara is a garden city in Gujarat and has more than 60 gardens. There is a full-fledged Garden Department headed by the Director of Parks and Garden with a sizeable staff of more than 500 people.

There are interesting data and information in this almost century-old department because of old-time good record keeping. At present this department just maintains simple data, there is hardly talk of computerisation and there are no prescribed MIS formats or flow of information for review.

N. Zoo Department

This is another very old glorious department of the VMC, but it is dilapidating now. There is no computerisation, there are no prescribed MIS formats and there is hardly any record keeping or information flow. The only report that gets submitted is about the acquisition, breeding and death of new birds and animals in the zoo.

O. Fire Brigade/Service Department

Again this department has a history of more than a century. It is adequate in size, modern and quite efficient. In many cities the role of this department has expanded beyond its traditional role. Nowadays this department is required to deal with all types of disasters.

The department is required by rules to submit a report to the council through a standing committee about the occurrences or numbers of fires, other types of accidental incidences that have taken place, loss of life, damage etc. Accordingly records are being kept on a manual basis and information is submitted regularly. Besides this there is hardly any information flow.

P. Other Sections

Besides the above mentioned departments, the VMC has other Departments: Public Relations, Legal, Election, Security, Encroachment Removal, Central Records, Shops and Establishment Act, Food Adulteration Act Implementation and Public Health Laboratory. All these minor departments keep their records manually and in a conventional way. They occasionally submit information to higher levels. Formal MIS and formats are absent in these departments. The VMC does not have two major departments that are part of many municipal corporations of western India: City Transport and Hospitals.

Summary

A local government is a worldwide institution. It exists under every possible political form: democracy, autocracy or military dictatorship. Local governments are more natural than legal as they are an expression of community. Therefore, several factors shape them, such as social, cultural, political, economic, history and geographical factors, creating tremendous variations in character.

Indian municipal bodies have a distinct colonial evolutionary history and at present they are suffering from various macro- (external) and micro- (internal)

deficiencies. As per legal structure local governments are state subject, implying that the state has the complete prerogative to decide upon the functional and fiscal domain of municipal bodies.

Against this backdrop a case study of two municipal corporations was carried out: historical Vadodara and the recent Navi Mumbai. Both are known for efficiency and good management. The purpose was to find out what kind of MIS exist in Indian municipal bodies and to know the possible bottlenecks while introducing MIS formats.

There is one thing that strikingly emerges from this case study. Even though there have been efforts to develop an integrated MIS, they were patchy and holistic. Their actual MIS primarily collect and store information, without providing analysed information for decision-making. Decision-making is mostly dependent on experience and intuition.

Chapter 4

Designing and Managing Management Information Systems in Municipal Bodies

INDEX

<i>Introduction</i>	81
<i>Designing MIS</i>	81
System Development Process	82
1. Feasibility and Planning	82
2. System Analysis	82
1. Feasibility and Planning	83
2. Systems Analysis	83
3. System Design	83
4. Systems Implementation	84
5. System Maintenance and Review	84
Early Methods of MIS Development	84
Recent Methods of MIS Development	85
1. System Development Life Cycle (SDLC)	86
2. Prototyping and Rapid Application Development (RAD)	86
3. Joint Application Development	87
4. Collaborative Development Technologies	87
5. Object-Oriented Development	88
6. Event Driven Development	89
7. End-User Development	89
Combining Methodologies	90
<i>Managing or Organising MIS Resources</i>	91
Managing the Information System Function	91
MIS Roles	92
<i>Centralisation and Decentralisation</i>	93
1. Hardware	94
2. Software	94
3. Data	94
4. Personnel	Error! Bookmark not defined.
<i>Computerised vs. Manual MIS</i>	95
<i>Balance between Centralisation and Decentralisation</i>	96
1. Client – Server Model	96

Software & Data _____	96
Personnel _____	96
2. Peer-to-Peer Systems _____	97
3. Outsourcing _____	97
<i>Summary</i> _____	<i>98</i>

4

Designing and Managing MIS in Municipal Bodies

Introduction

The ever-increasing importance of Management Information Systems in modern organised life makes it imperative for municipal decision-makers to plan, design, implement and maintain these systems meticulously in their municipal bodies. The Information and Communication Technologies (ICT's) are changing rapidly as well, causing changes in the MIS resource. Consequently, MIS need to be updated continuously.

For many people a MIS implies a computer-based and operated information system. Computers and MIS seem to be inseparable; a manually maintained MIS is unthinkable. A MIS does not need to be developed manually first before computerising it. The rapid developments of the ICT have made it possible and inevitable to introduce computerised MIS. Indian municipalities do not have any MIS on a manual basis. However, it is possible that a large number of municipal bodies find it difficult, both financially and technically, to introduce computerised MIS. They should introduce MIS on a manual basis. What matters is the existence of a MIS in order to improve the managerial efficiency.

This chapter discusses the possible problems when developing an information system, the commonly used techniques to develop a MIS and how to manage or organise a MIS and its resources in an organisation.

Designing MIS

In earlier days, designing a MIS was not a problem. One did not use computers yet, organisations were small and simple and there was no information explosion yet. Even today it is not complicated to design an Information System on a manual basis or to use simple computer applications for a small municipal body. The output can be used directly for decision-making. The problem arises when an independent Information Officer is required to create and maintain an online computerised information system that needs to serve various decision-makers for several purposes.

MIS have to support all types of managerial needs like strategy, factions and operations. The information system requirements need to be split into logical small units, a system for each unit needs to be developed and these smaller information systems finally need to be integrated into cohesive, unified MIS. An individual non-MIS manager – a municipal officer - cannot work without the support of a team of MIS and computer specialists. The end-user managers have to work together to create an information system for a municipal body.

Despite the advances in technology and the emphasis on teamwork and the use of methodologies, the development of MIS remains a craft or an art. The quality and success of a MIS depend on the work of individuals. Consequently, a municipal body or the responsible officer should take great care in selecting the individuals or consultants.

There are several methods to design a MIS for an organisation. Some of them might not be applicable for a municipal body. Since MIS and computerisation have become inseparable, the methods discussed in this manual are essentially to develop computerised MIS. However, the essence or framework of these methods can also be used to develop manual operation-based MIS for a municipal body.

System Development Process

Every system development process consists of five basic phases:

- Feasibility and Planning
- System Analysis
- System Design
- Implementation
- Maintenance and Review

Every methodology uses these generic steps and hence it can be used to design both manual and computerized MIS for municipal bodies. Figure 4.1 shows the generic system development process.

1. Feasibility and Planning

A feasibility study is a quick examination of the problems, goals and expected costs of the system. The objective is to determine whether the problem could be solved with a better system. There might be a better or cheaper alternative or the problem might be short-term. It is also possible that today's technology cannot solve the problem and that an improved technology or lower prices are needed. A feasibility study reveals all such information beforehand.

It should be a written document and thus easily understandable for all persons involved. It can be used to 'sell' a concept or project to the upper- management. Moreover, it has a high reference value to keep the project on track and to evaluate its progress.

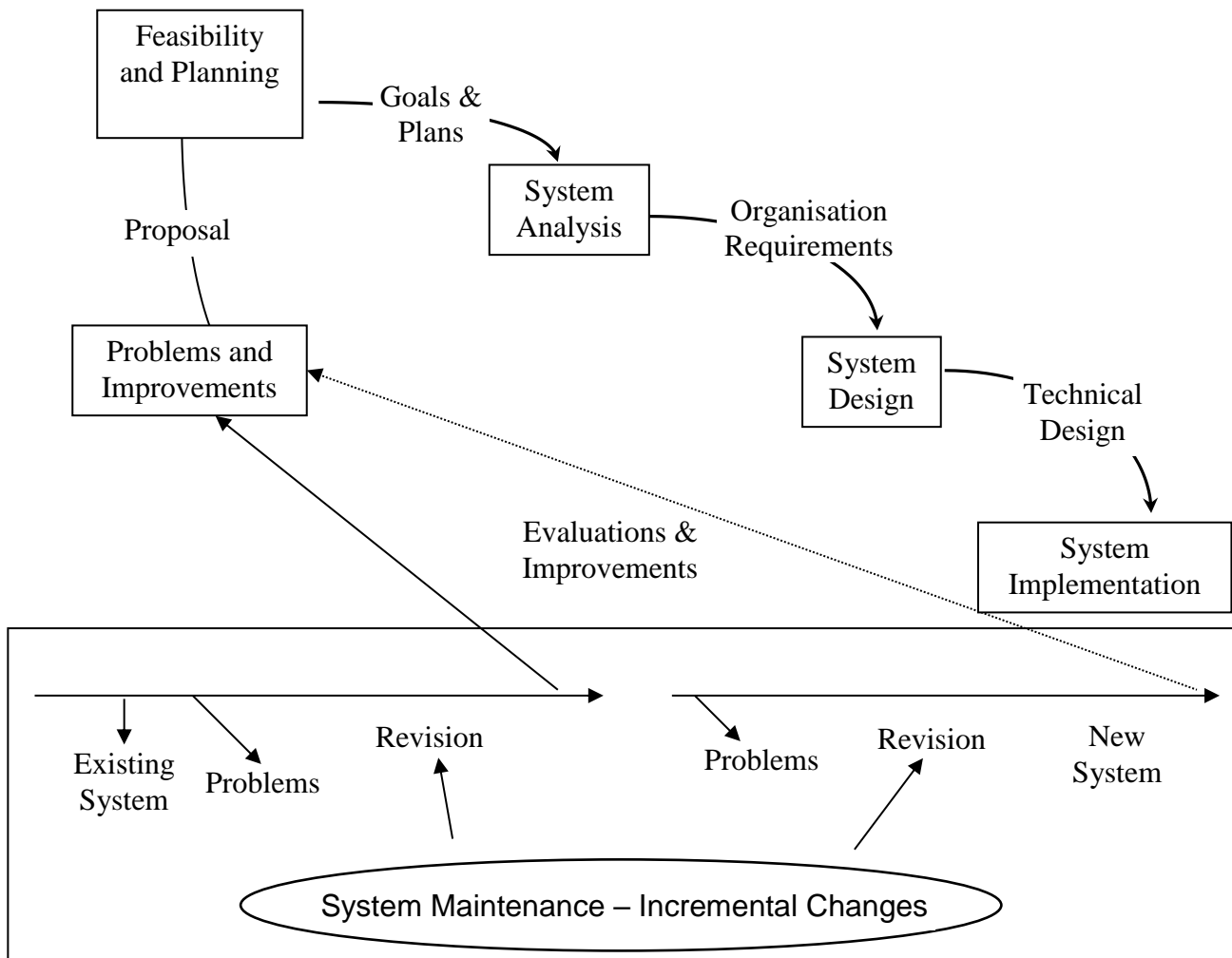
After the feasibility study a detailed plan and work schedule need to be made, containing a detailed listing of the next logical steps to be taken: which parts of the project need to be completed by what date. Estimating the actual costs and completion dates is extremely difficult.

2. System Analysis

Once a system development proposal has been shown to be feasible and once it has been approved, work should begin on a full-fledged or system analysis. First one has to determine how the existing system works and where the problems are located. This technique serves to break the system into pieces and to study them. Diagrams are often created to illustrate the system and to communicate among the analysts, programmers and users. Data flow

diagrams are a common method to display the relationships that were determined during systems analysis.

Figure 4.1 - System Development Process



At the end of this phase, the system development team will have a complete description of the business requirements. The problems and needs are documented with text, data flow diagrams and other figures - depending on the methodology followed.

3. System Design

In this phase the new system is typically designed on paper. The objective is to describe the new system as a collection of modules or sub-systems. The diagrams created during the analysis phase are modified to indicate how the new system will work. The design will list all the details including data inputs, system outputs, processing steps, database design, manual procedures and feedback and control mechanisms. Back-up and recovery plans, along with security controls, are spelled out to ensure that the database in the new system is protected. Manuals and procedures are written to instruct users and system operators on how to use the system in this phase.

Once the system design is ready, the users are invited for a structured walkthrough. This is a review process with the objective of revealing problems, inaccuracies, ambiguities

and omissions in the systems design to users before finalising it. Wherever possible, users should receive a prototype or mock-up of the proposed system. The number of walkthroughs depends on the available time and resources. The output of this stage consists of a complete technical specification of the new system and should be as detailed as possible.

A difficulty in the design stage is sometimes called 'creeping elegance'. As the system is being built by analysts, programmers and users, they all try to include as many additional features as possible, causing delays and complications.

4. Systems Implementation

This stage involves the installation and changeover from the previous system to the new one, including training users and making adjustments to the system. Change is the ultimate step in the implementation stage, causing many complications and hence one needs to be extremely careful. For example, users might be nervous about the change and if something goes wrong, they may never trust the new system. Secondly, many people do not like changes, as it requires an effort to learn new ways of doing the job. In case the proposed system has been changed many times, people are afraid to lose their job or importance in the organisation.

Effective implementation involves finding ways to reduce this resistance to change and encouraging people to accept the new system. Involve users extensively in this process, capacity building, training, inherent flexibility in system design and appropriate incentive schemes are some tools for a smooth system implementation.

5. System Maintenance and Review

Once the system is installed, the line managers are responsible for the system's maintenance. Developing the system involves sizeable costs so it should be maintained properly.

The macro- and micro-environment of an organisation continuously changes, creating a need to upgrade and thus make system reviews at regular intervals inevitable. The review should assess the effectiveness of the system and reported new problem areas and their urgency - simple ways to carry out a minimum update without doing a complete system development process. The review should also continuously watch the costs required to maintain the system and ways to minimise them.

Early Methods of MIS Development

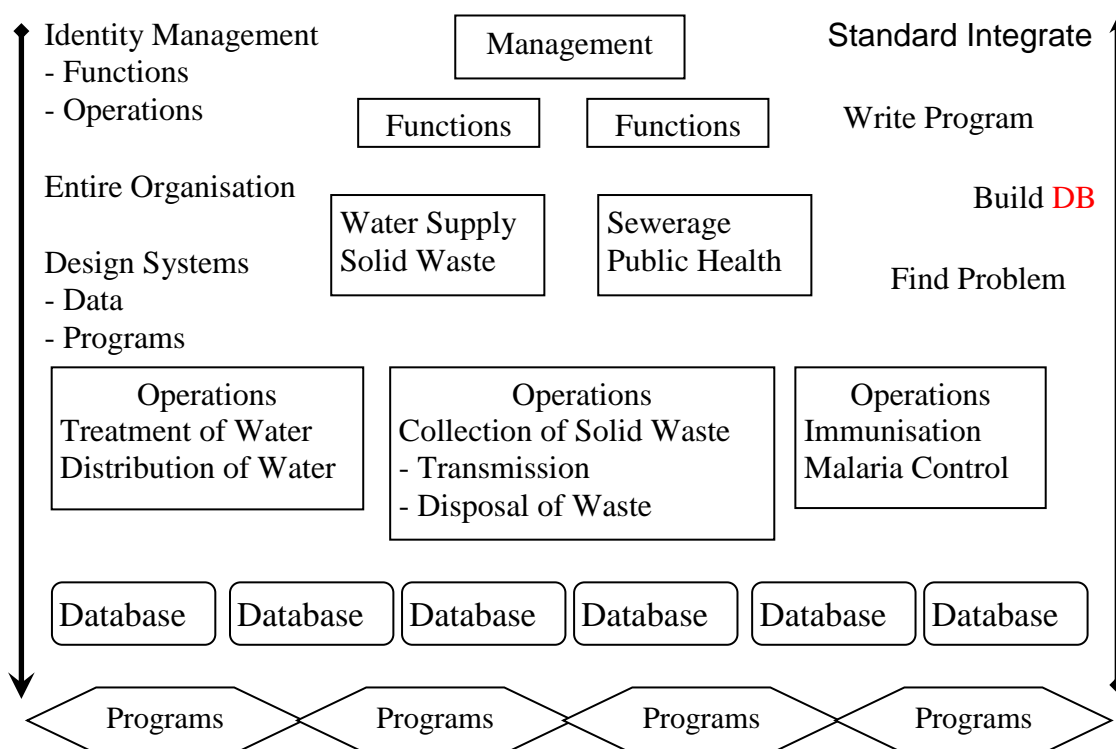
The early methods to design a MIS were various. One method was to draw flow charts, showing the flow of information from its source to the end-user. Another method was 'pseudo code', developed by a computer programmer, in which the end-user had to verify the accuracy of the system.

Two other methods are Top-Down and Bottom-Up. The first approach starts by examining the entire organisation and seeks to improve the overall operations by making changes to the most critical areas. It starts at the top, identifying functions and operations of the management before they are broken down into different processes. A MIS is designed for data generation to serve these functions and operations. The biggest drawback is that the design is a never-ending process.

The Bottom-Up method requires immediate action. First the problem is identified, then a database is built and finally a MIS is structured for that function or department. In a later stage these specific information systems are integrated to form a MIS for the entire organisation. The strength of this approach is that each problem gets solved relatively quickly and that end-users can control the system. The weakness is that the organisation could have incompatible systems.

An organisation can use a combination of both. It should use the 'Top-Down' design approach to set long-term goals and to maintain internal consistency of the MIS, and the 'Bottom-Up' method to solve day-to-day problems and information requirements. Figure 4.2 shows the relationship between the two methods.

Figure 4.2 - Top-Down & Bottom-Up Design - Relationship



Recent Methods of MIS Development

Different consulting firms in MIS use their proprietary methodology to develop MIS for their clients. For example *Andersen Consulting*, a division of *Arthur Andersen & Co.*, uses 'Method/1', and uses four phases in the development process:

- Planning
- Design
- Implementation
- Maintenance

McKinney and Co. examines organisations with a copyrighted 'Seven S' model: structure, system, style, staff, skills, strategy and shared values. *Ed Yourdon* uses a graphical diagram to model the hardware and software. In this manual the following seven recent methods to design a MIS will be discussed:

1. System Development Life Cycle (SDLC)
2. Prototyping and Rapid Application Development
3. Joint Application Development
4. Collaborative Development Technologies
5. Object-Oriented Development
6. Event Driven Development
7. End-User Development

1. System Development Life Cycle (SDLC)

The System Development Life Cycle (SDLC) is also known as a waterfall methodology, as each step produces outputs that are used in the next step. It follows the five classical generic steps of the system development process, explained earlier in detail (figure 4.1). The existing system is being studied to detect problems and to think of improvements, followed by an analysis of the feasibility of the new design. This in-depth analysis generates the organisation's requirements. The implemented technical design creates a new system. This is maintained and analysed regularly - an ongoing process.

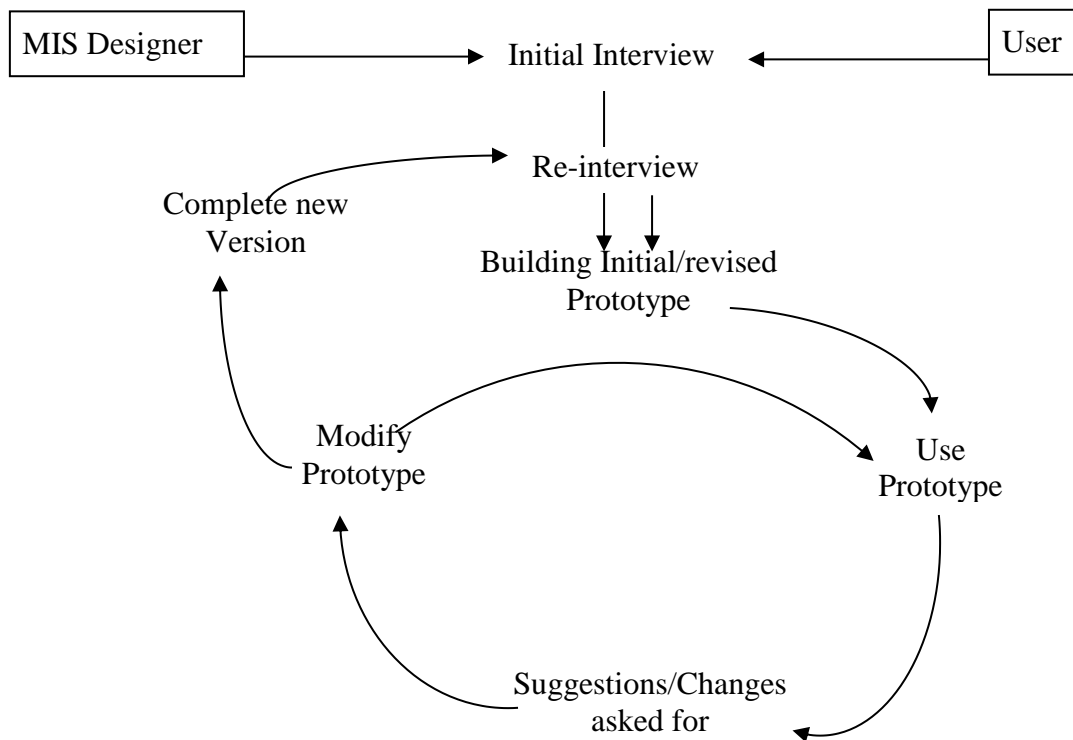
2. Prototyping and Rapid Application Development (RAD)

Prototyping is used for systems that are not complex and do not involve many users. A MIS developer interviews the users and develops a prototype. The user works with the prototype and suggests changes. This process will be repeated until both the user and developer are satisfied. It is essentially a process to develop computer programs but it can also be used for manual MIS development. Figure 4.3 presents the method.

This system is easy to change as it is designed to be modified from the start. Ideally one person designs and develops the system, whereas recent advanced software tools and methods discussed earlier enable a single person to build considerable complex and voluminous MIS. However, an information system often involves and affects the entire organisation and consequently requires teamwork of experts and users. There are two techniques to address the issue of MIS development through teamwork.

An advantage is that users often have difficulties in telling designers what they expect from a system, whereas it is much easier to express thoughts on a prototype or sample output. The method can cause problems, however, when there are several users who do not agree on the functioning of the system. Another subtle drawback, mainly faced by the MIS manager, is the lack of control over the system designer and user. It is hard to determine whether the designer is making fundamental or minor changes, or to stop users from suggesting trivial, unnecessary changes.

Figure 4.3 - Prototyping



Rapid Application Development (RAD) is similar to Prototyping. The goal is to build a system that is much faster than traditional SDLC methods. Using tools like database management systems, high-level language toolkits and objects, highly trained programmers can build systems within weeks or months. Using workgroups, communication networks and CASE tools, small teams can speed up the development and design steps.

3. Joint Application Development

One of the crucial areas in designing a new system is to determine the user requirements, like the expectations and functioning of the system. If anything goes wrong with this stage, the system becomes useless or will need expensive modifications.

The technique known as Joint Application Development is created to speed up the design stage. The main system is designed in an intense three-to-five-day workshop, in which users, managers, system analysts and developers decide on the inputs, outputs and procedures. This method leads to better understanding and conflict identification and resolution, provided that everybody meets together at the same time and a trained facilitator must conduct the workshop.

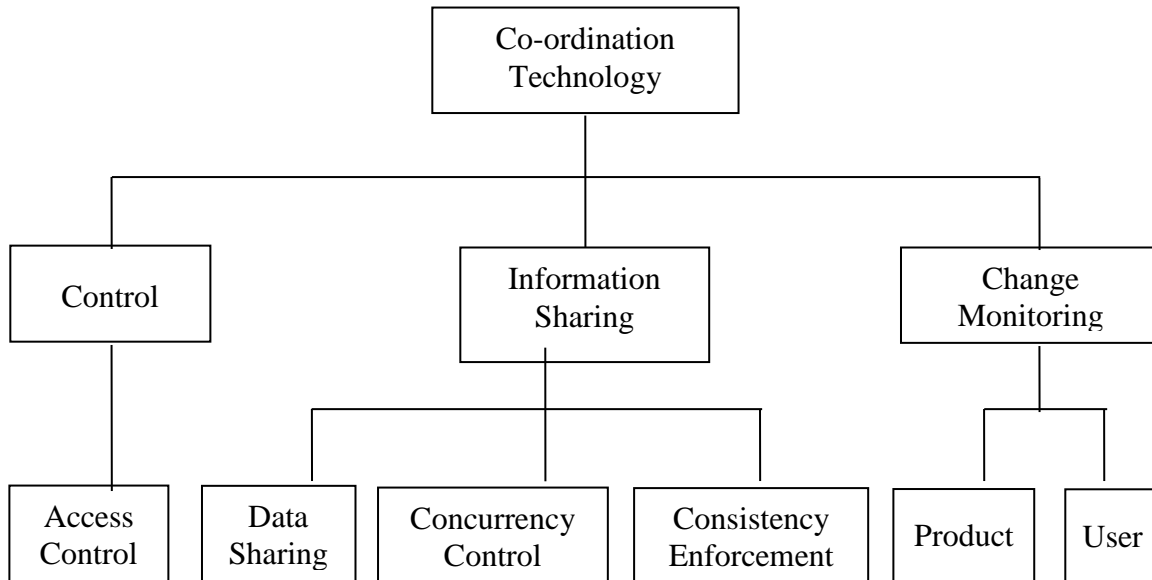
4. Collaborative Development Technologies

According to Vessey and Sravanapudi there are three task levels in developing systems:

Level 1	Tasks that cannot be shared
Level 2	Sharing of work products
Level 3	Typical group sharing that is not dependent on particular products

Teamwork requires three levels of co-ordination in designing systems: control, information sharing and change monitoring. Figure 4.4 illustrates these components.

Figure 4.4 – Collaborative Development Technologies



Control entails setting access control so that only authorised people can read and alter specific information. Information sharing entails providing networks and communication, keeping all data consistent and avoiding problems with concurrency. Change monitoring entails keeping track of which developers made changes to the project and when they are made.

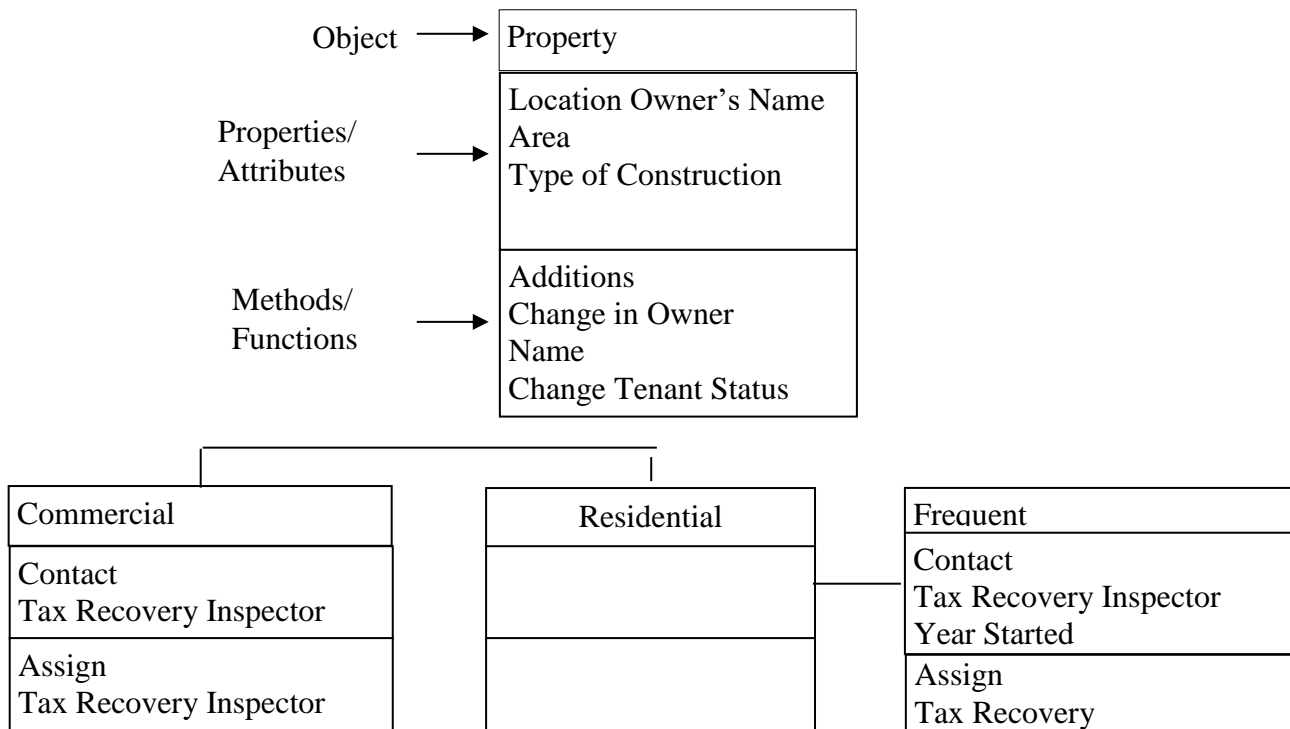
Any Collaborative Development Technology created for the information system development should provide support to level 2 and 3. Collaborative techniques are beneficial for the MIS development, in particular regarding integration, communication, scheduling, the sharing of documents and joint development of reports.

5. Object-Oriented Development

Object orientation is a relatively new approach. Each object represents an entity in the real world and has a name. According to the properties and methods, objects can be defined and placed in hierarchy.

The key difference between this technique and other MIS development methods is the way processes or functions are handled with. All functions are embedded in the definition of the object; the object comes first. It reverses the treatment of processes and data. In SDLC the emphasis is on processes, while here it is on the object to be achieved. Figure 4.5 shows sample properties and methods for a set of related property tax account objects.

Figure 4.5 – Object-Orientated Development; Property Tax Account



6. Event Driven Development

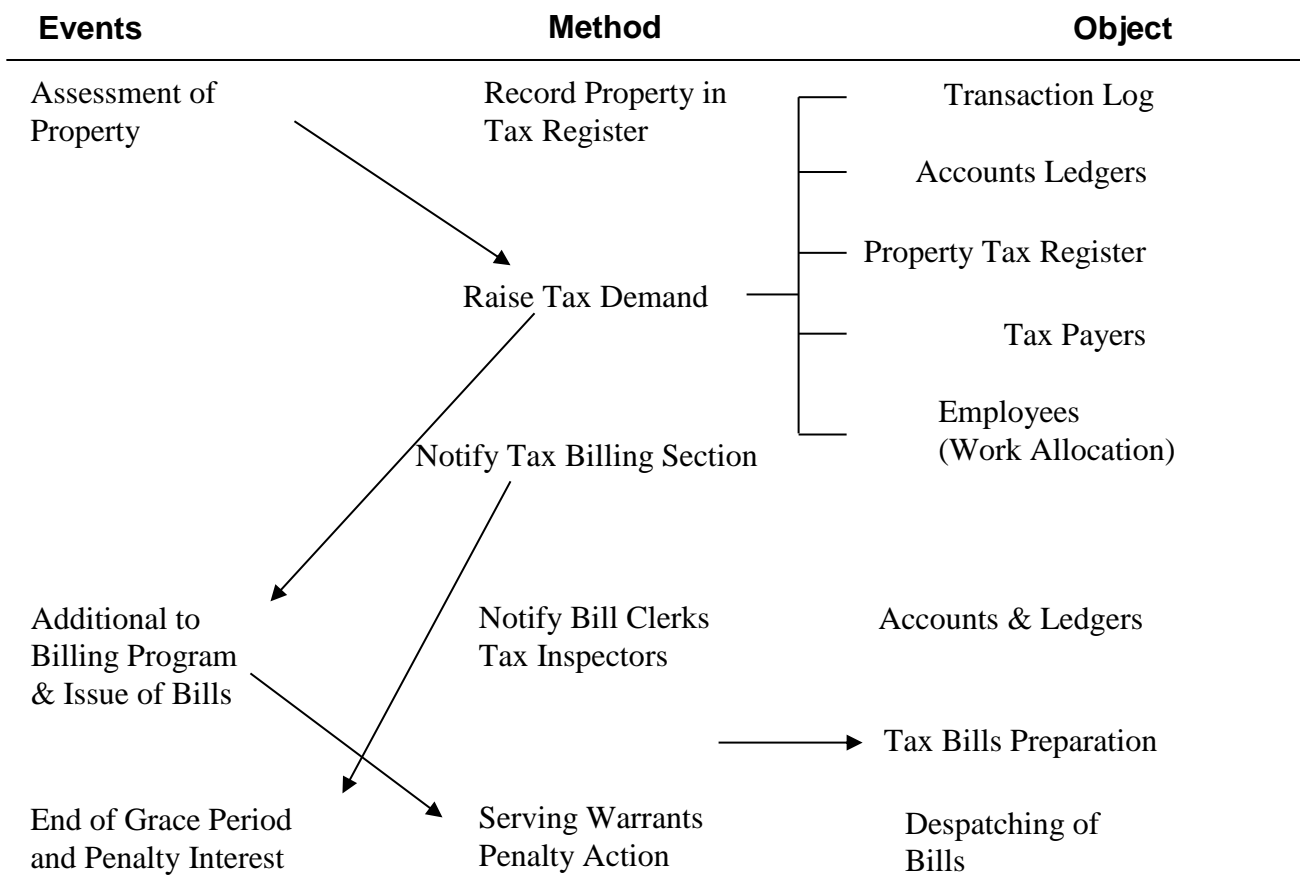
This is a modern programming feature. Earlier programs defined and controlled every step taken by the user, whereas modern window-based software does not follow sequential processes and users rather take action to generate events such as mouse clicks pointing to items on the screen.

In this context, a decision-maker in a municipal body who is developing a MIS will be asked to identify important objects and to determine specific events and rules. As certain events occur, data elements will be changed or added. For example when a property tax bill is served, several actions take place: recording property-tax dues or updating the receivables figure notifying other departments and the customer service (see figure 4.6). The municipal manager and users have to communicate these relationships and events to the system designer to get the MIS system developed properly.

7. End-User Development

In this method users do all the development work. It resembles Prototyping, except for the fact that users create and modify the prototypes instead of system analysts. Figure 4.6 shows the working of this technique.

Figure 4.6 – End-User Development



End-user Development is becoming increasingly popular since specialised custom-made systems require a lot of time and money and because the software tools are getting evermore powerful and user-friendly. It is for example possible to create systems with a spreadsheet in a few hours. Ten years ago it would have taken a MIS programmer a month to build this with third generation languages. Similarly, with windowing software it is possible to build systems that share data with many users within the organisation.

Most of the problems arise because users generally lack the training and experience of MIS analysts and programmers, or because the systems produced by end-users become individualistic and standalone. Therefore they lack security controls, they are hard to modify and data could get scattered. Such systems need to operate within the limitations of the software.

Combining Methodologies

In actual practice organisations and companies use a combination of the existing methods to design and build a MIS. Figure 4.7 summarises the features of the various methods. Each methodology has advantages and disadvantages and is suited for different applications. When choosing a methodology, the training and background of the users and development team should be taken into account.

Figure 4.7 - Different Design Methodologies – Comparison

	SDLC	RAD	Objects	JAD	<i>Prototyping</i>	End Use
Control	Formal	MIS	Standards	Joint	User	User
Timeframe	Long	Short	Any	Medium	Short	Short
Users	Many	Few	Varies	Few	One or two	One
MIS Staff	Many	Few	Split	Few	One or two	None
Transaction or DSS	Transaction	DSS	DSS	DSS	DSS	DSS
Interface	Minimal	Minimal	Windows	Crucial	Crucial	Crucial
Documentation & Framing	Vital	Limited	In Objects	Limited	Weak	None
Integrity & Security	Vital	Vital	In Objects	Limited	Weak	Weak
Reusability	Limited	Some	Vital	Limited	Weak	None

Managing or Organising MIS Resources

To make effective use of information systems, the MIS resources – hardware, software, data and personnel - need to be organised. The role of the MIS is to support everyone. Some officers, however, see it as their personal genie and conflicts arise. Therefore, the resources should be organised in such a way they support everyone, creating a minimum of conflicts. The resources need to be positioned in the organisation, which revolves around decentralisation versus centralisation. The goal is to balance the need for central control and the value of decentralised decisions.

Managing the Information System Function

The MIS function is one of the most difficult functions to evaluate. There are very few objective criteria. The advent of the personal computer and application software have made problem solving a job of a few hours and of a generalist. This has created a question mark against the MIS function and the department.

It is much easier to build information than to manage it. Changes in technology and software are continuously creating opportunities to reduce the costs and to make the MIS more effective. Equipments and software, however, involve costs and they also require training of workers and a modification of the database. Thus the management has to find a balance between the need to update and the costs. Managing the MIS function starts with the understanding of the roles of a MIS.

MIS Roles

The role of a MIS is changing but has never become redundant with the advent of new technologies. Today MIS has the following roles:

- Providing increasing support to workers, no replacement
- Providing transparent access to corporate data
- Optimising access to data sorted on multiple platforms for many user groups
- Maximising end-user's ability to be self-sufficient in meeting individual information needs

The specific roles of a MIS are:

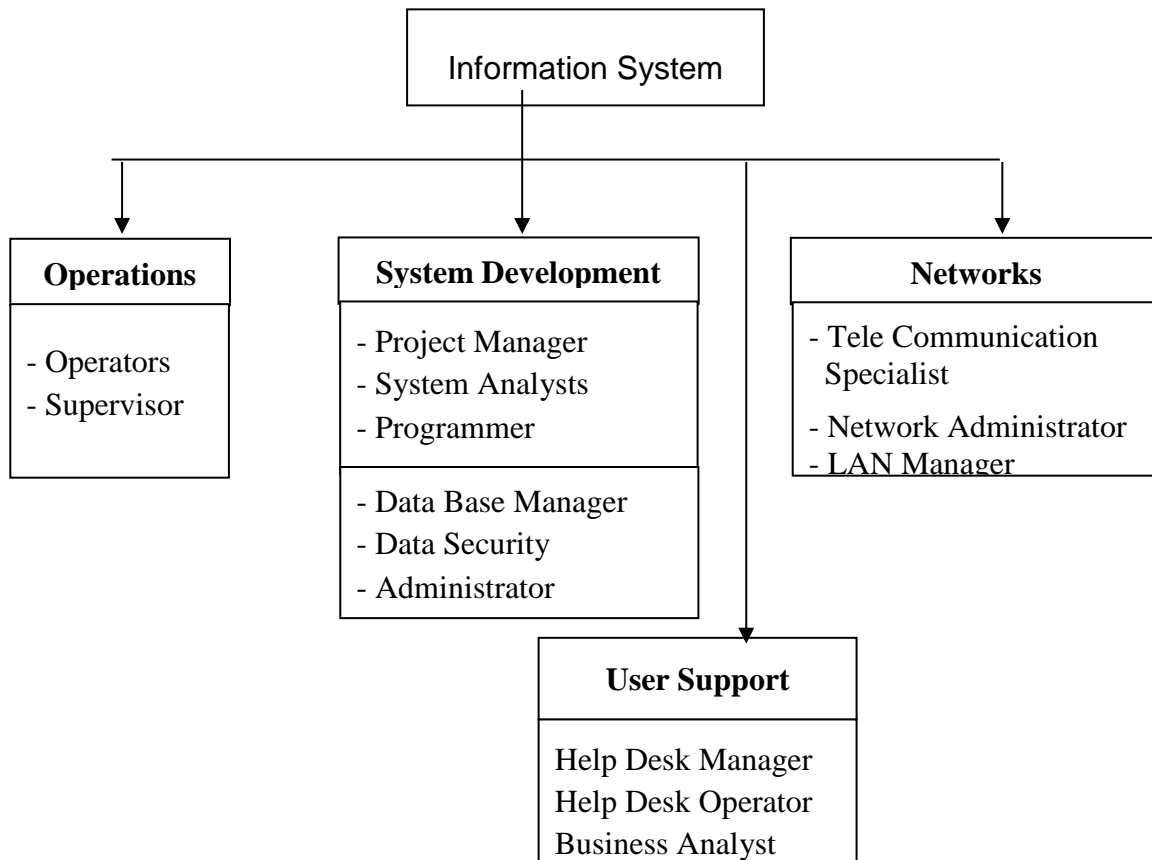
- Hardware Administration
- Software Support
- Access to Corporate (Central) Data
- Software Development
- Support to End-User Development
- Establish Standards
- Data and Database Administration
- Advocacy Role

To manage or organise a MIS function, the appropriate organisational structures, processes and rules need to be created to carry out each of the above roles. The size, the number of levels or the number of employees of the MIS department depend on the size, complexity and volume of an organisation and on the attitude of its management towards the MIS function.

For example if an organisation only adds personal computers, there will be a problem of data sharing and additional hardware is needed to link all personal computers. If this is not done and if there is no MIS department, the organisation needs someone to take care of the hardware. In case maintenance is outsourced, someone from the organisation needs to monitor the work. It is up to the management to create a separate department for the MIS function, but it is needed to ensure the MIS function and its above roles.

In order to perform the above roles, the organisation's MIS department usually needs four types of people. One or more people may be required to handle one type of job or more than one type of jobs may be handled by one person. The number of people can differ, but the types of job will exist. The work will be done by dedicated people under separate sections of a MIS department, or by one or more persons working in a pooled manner under the General Administration Department. A municipal body that wants to introduce a MIS will have to create an organisational system of various jobs done by the appropriate people who fulfil the generic roles of the MIS department. Figure 4.8 depicts the various roles, classified into four types of jobs.

Figure 4.8 – Roles Classified into Types of Jobs



Centralisation and Decentralisation

Centralisation and decentralisation are associated with every single aspect of organised human life. Politicians, economists, social scientists and organisational theorists have debated them for centuries.

The basic argument for centralisation revolves around the need to co-ordinate activities and efficiencies that can be gained from large-scale operations. Proponents of decentralisation say that moving the control to smaller units creates a more flexible system that can respond faster to market changes, and that the system encourages individual differences and innovations.

With reference to computerised information systems there are four areas that are subject to centralisation or decentralisation:

1. Hardware
2. Software
3. Data
4. Staffing

To determine the best way to organise information resources a municipal body and its decision-makers need to be clear about the centralisation or decentralisation of these areas.

1. Hardware

The present decentralisation move is driven by the costs of hardware, the availability of personal computers and the network technology. Decentralisation of hardware reduces the chances of a total breakdown. It also offers the possibility of having personalised equipments. For example a financial analyst may need the fastest machine, whereas a market person may need a portable computer.

In spite of today's decentralisation drive, the centralisation of hardware still has validity:

- Making sharing of hardware, software and data with multiple users easy
- Avoiding duplication of assets and infrastructure, keeping costs down
- Controlling user access to information
- Facilitating system and data security
- Leading to centralisation of purchasing and standardisation

2. Software

Software is indispensable and nowadays it is even possible to centralise some of its aspects with decentralised hardware. For example it saves costs to buy software with a multi-user option. Or if everyone uses the same software this solves compatibility problems, data can be exchanged and upgrades, training and assistance become easy. However, centralised software takes considerable time for loading and running, which may make the entire system more slowly.

Prescribing identical packages lead to major arguments between users and the MIS department. To some extent, users should have the ability to customise their software. But decentralised software can lead to increased work for the MIS department and it can be problematic to integrate different software.

3. Data

Centralised data can be shared amongst the users. It also makes it possible to protect the integrity and security of data, monitoring the user's access and usage.

The strongest advantage of decentralised data is that it gives the user a better access. It essentially stores data where it has been used. Users get a complete control of the data and can take care of it, which does not pose any problem for data that does not need to be shared.

4. Personnel

Traditionally, centralised MIS staff performed the MIS roles. However, technological and networking revolutions are increasing the pressure to decentralise MIS personnel.

The benefits of centralised MIS staff accrue mainly to the MIS staff itself. Centralisation creates a homogeneous group and helps them with their career path or to make them versatile. It also makes it easier for the organisation to provide additional training to its staff. Finally, the organisation can hire a MIS specialist, which makes it easier to know the costs and output of the MIS staff.

The main advantage of decentralised MIS staff is a closer contact with the user. MIS staff gains a better understanding of the problems faced by the users and the communication between users and MIS staff improves.

Figure 4.9 - Summary of Benefits of Centralisation and Decentralisation

Areas	Centralisation	Decentralisation
1. Hardware	<ul style="list-style-type: none"> - Share Data - Share expensive Hardware - Control Purchase - Control Usage - Less Duplication - Efficient Use of Resources 	<ul style="list-style-type: none"> - Less Chance of total Breakdown - User gets personalised Machines - Microcomputers are cheaper
2. Software	<ul style="list-style-type: none"> - Compatibility - Bulk Buying Discounts - Easier Training - Ease of Maintenance 	<ul style="list-style-type: none"> - Different User Preferences - Easier Access - Customisation
3. Data	<ul style="list-style-type: none"> - Easy Backup - Easier to share - Less Duplication - Security Control & Monitoring 	<ul style="list-style-type: none"> - Not all Data needs to be shared - Easier and faster Access - Control and Politics
4. Personnel	<ul style="list-style-type: none"> - Similar Worker Background - Easier Training - Career Building - Specialised Staff - Easier to know & control Costs 	<ul style="list-style-type: none"> - Faster Response to Users - More Time with Users - Better Understanding and Communication

Computerised vs. Manual MIS

The issue of centralisation and decentralisation, though primarily viewed in the context of a computerised MIS, is also relevant if an organisation is having a manual MIS. The two components hardware and software will not be present in a manual MIS, but to organise and manage a MIS this issue is equally important to data and personnel.

For example, even if data collection, storing, retrieval and the presentation process are manual, an organisation has to make certain decisions. They need to decide whether centralised MIS staffs handles these processes, whether such data should be kept in a centralised form at a central place and whether departments have a MIS person who maintains the data in the departments.

Centralisation and decentralisation become more pronounced in the case of municipal bodies, as they are characterised by multiple functions and geographically dispersed offices. Data regarding the water supply is completely different from data on streetlight. Since the functional heads do not need each other's data, this suggests decentralised data. The central office, however, needs data on all the functions and activities that warrant centralised data.

Similarly, in certain departments or functions the data generation is voluminous and frequent, requiring separate and thus decentralised MIS staff to maintain the information. Certain functions however - even though important and generating vital information such as death and birth registration - require centralised staff and data.

Balance between Centralisation and Decentralisation

In practice no organisation, including municipal bodies, can have a completely centralised or decentralised MIS. Each organisation has to find the balance between the benefits and costs of the each method or option. A municipal body using one or more of the following three options can try to strike balance between centralisation and decentralisation.

1. Client – Server Model

The first method strictly separates all components into two categories: clients and servers. Hardware is the distinctive feature of this model. Users are provided with personal computers that are attached to the servers through a local area network. The MIS staffs maintain the servers and the network. A user can purchase personal computers, printers and other peripherals or departments and the MIS department provides advice or purchases as per the user's requirements.

Software & Data

Commercial software and data, to be used by several users, are stored on the server, while special or customised software is prepared for a user by the MIS department. Software acquired by the user is stored on the user's personal computer. The user can use the network to send data that is not maintained on the server directly to other users.

Personnel

Through computer network solutions a system can be created, whereby a user who is facing a problem while developing spreadsheets or graphs can seek online support of MIS staff. MIS staff carries out the transaction processing, the standard reports network management and defines the databases.

The Client-Server Method is useful for a manual-based MIS. A municipal body can classify generated and required information into two categories: user specific and shared information. On the one hand, the client or user department is responsible for the maintenance of the information database. This database is for own usage and it is used to communicate information, required by the Central Office and other departments, to the server or MIS department. On the other hand, the MIS department is responsible for the maintenance of the centralised database and for the dissemination of information, required by the clients or the server. The MIS department also looks after devising standard formats to collect, transmit and store information.

2. Peer-to-Peer Systems

This system is an intermediate step towards a more distributed system. In a peer-to-peer system any personal computer can be a server, a client or both. This allows greater flexibility in terms of storing and accessing data. Clients can also access each other's data. However, this approach leads to some problems like data and system security. It also becomes difficult for users to find the required data from the scattered database.

Regarding the manual MIS, this approach means that different departments or users share, send and receive the required information without routing it through the central office. The information has different target groups:

- For own or user's purpose
- For other users only
- For central office or server only

A user can send the required information directly to another user without unnecessarily routing it through the central MIS department. Clients will send the vital information required by the central or top management to the server. This approach reduces the burden of the central MIS department and at the same time it reduces the control of the top management over users and departments, as the information flow takes place between different departments without knowledge of the central office or management.

3. Outsourcing

The first two approaches offer many advantages and organisations are adopting them in various ways. But it is difficult for organisations who introduced highly developed centralised MIS in earlier years to change to these new approaches or systems. It is also possible that organisations have an increase in support costs that outweigh the saved costs.

The third one, which is associated with the first two approaches, is outsourcing. In this case the organisation sells or hands over its central computers, part of the MIS staff and other peripheral systems to a service company. The organisation is required to sign an agreement stating they can use the services of the outsourcing firm for a fixed number of years. Depending on the agreement, the outsourcing firm can be responsible for anything from machine operation and maintenance, to the development of new systems and telecommunication services. Outsourcing has primarily been used to decrease operating costs or to develop a MIS system without investing in capital costs.

Outsourcing is useful for straightforward applications or technologies, transaction processing, maintenance of the legacy system, hardware and software maintenance and for routine application development. But if it involves the development of strategic applications, leading-age applications or in situations that require security, the organisation should handle it internally. The biggest issue with outsourcing is who will be responsible for the identification of solutions and the new users of technology for the firm.

In case of a manual MIS in municipal bodies, outsourcing does not offer any solution. However, it does offer immense possibilities to municipal bodies that have a traditional centralised computer-based MIS. It is also useful for a municipal body that is converting its

MIS to a computerised MIS. For example, the Surat Municipal Corporation has been utilising this approach in the last decade to develop its accounting system and MIS. The outsourcing agency invested its money and placed necessary hardware, software and staff to run the accounting and MIS system. Recently the Indore Municipal Corporation got its tax billing, payrolls and account-related systems developed through outsourcing.

Summary

Information management has become extremely important for all organisations, including municipal bodies. Most of the Indian municipal bodies, however, do not have adequate MIS. Therefore, effective and efficient design and management of MIS are the two most crucial issues Indian municipal bodies are facing. They are a basic necessity to meet all challenges that municipal governance encounter in the 21st century. However, this is not an easy task. Various methods of MIS development have been discussed in this chapter.

Efficiently managing a MIS is a perennial issue for any organisation and municipal bodies cannot be an exception to this. Recent technological changes have created complex problems regarding centralisation and decentralisation. Different approaches have been utilised to achieve a balance between these two conflicting ends. The discussion of the various roles and jobs in a MIS and the discussion about these approaches will be useful for any municipal body.

Chapter 5

Model Municipal Management Information System Formats

INDEX

<i>Model Municipal MIS Formats</i>	105
I. General Administration	106
i. Establishment Department – MIS Formats I/A/1 to I/A/14	106
1. Summarised Report – Total Posts sanctioned, filled and vacant (MIS - I/A/1)	106
2. Department-wise Posts sanctioned, filled and vacant (MIS - I/A/2)	106
3. Posts sanctioned, filled and vacant (MIS - I/A/3).....	106
4. Status Report on Schedule Cast/Schedule Tribe/Other Backward Class Posts - sanctioned, filled and vacant (Summarised) (MIS - I/A/4).....	107
5. Status Report on Daily-Wage Employees (Summarised) (MIS - I/A/5)	107
8. Employees under disciplinary Action (MIS - I/A/8)	107
9. Terminal Benefits Payment Status Report (MIS - I/A/9).....	108
10. Status Report on Employee Absenteeism (Summarised) (MIS - I/A/10).	108
11. Status Report on Employee Absenteeism (Detailed daily report)(MIS - I/A/11).....	108
12. Governments' Letters pending for Reply Report (MIS - I/A/12)	108
13. Pending Audit Para/Objections Status Report (MIS - I/A/13).....	108
14. Status Report on Training to Municipal Employees (MIS - I/A/14).....	109
ii. Legal Department - MIS Formats I/B/1 to I/B/5	109
1. Pending Cases filed by Municipal Body - Ageing Analysis (MIS - I/B/1 & I/B/2)	109
2. Annual Status Report on legal Cases filed against Municipal Body (MIS - I/B/3).....	109
3. Annual Status Report on legal Cases filed by ABC Municipal Body (MIS - I/B/4).....	109
4. Performance Evaluation of Lawyers hired by ABC Municipal Body (MIS - I/B/5).....	109
iii. Tax Assessment - MIS Formats I/C1 to I/C/5	110
1. Status Report on Assessment of Properties (detailed) (MIS - I/C/1).....	110
2. Status Report on Assessment of Properties (summarised) (MIS - I/C/2)..	110
3. Status Report on Tax Litigations (MIS - 1/C/3)	110
4. Status Report on Assessment Work (employee-wise) (MIS - 1/C/4)	110
5. Status Report on Clearance of Tax Objections raised by People (MIS - I/C/5)	111

iv. Tax Recovery – MIS Formats I/D/1 to I/D/8	111
1. Status Report on Preparation of various types of Bills by Electronic Data Processing (EDP) Department (MIS - I/D/1)	111
2. Tax Recovery Performance Report (Summarised) (MIS - I/D/2)	111
3. Statement on Total Tax Demand (Detailed) (MIS - I/D/3)	111
4. Statement on Total Tax Recovery (Detailed) (MIS - I/D/4)	111
5. Statement on Pending Tax Dues (Detailed) (MIS - I/D/5)	111
6. Statement on Ward-wise/Block-wise Tax Recovery (MIS - I/D/6)	111
7. Tax Recovery Status Report (employee-wise) (MIS - I/D/7).....	112
8. Value-based Analysis of Tax Payers (Tax Bills in Arrears) (MIS - I/D/8)...	112
v. Self-Assessment System for Tax Payment – MIS Formats I/E/1 & I/E/2	112
1. Status Report on Self-Assessment Forms Submission (MIS - 1/E/1).....	112
2. Status Report on Steps taken against Self Assessment System Defaulters (MIS - 1/E/2)	112
vi. Octroi - MIS Formats I/F/1 to I/F/6	113
1. Octroi Revenue Status Report (MIS - I/F/1)	113
3. Octroi No-Bill Cases Assessment Status Report (MIS - I/F/3)	113
4. Octroi Revenue – Commodity/Articles-wise Analysis Report (MIS - I/F/4)113	
5. Octroi Vigilance Squad Status Report (MIS – I/F/5)	113
6. Non-Tax Revenue Report (MIS - I/F/6)	113
vii. Accounts/Finance Department - MIS Formats I/G/1 to I/G/9	114
1. Monthly Financial Position (MIS - I/G/1)	114
2. Statement Showing Receipts against Budget (MIS - I/G/2).....	114
3. Statement showing Expenditure against Budget (MIS - I/G/3).....	114
4. Statement on Investments in Bank Fixed Deposits (MIS - I/G/4)	114
5. Status Report on Returned/Dishonoured Cheques & Recovery (MIS - I/G/5)	115
6. Summarised Status Report on Returned/Dishonoured Cheques (monthly Report) (MIS - I/G/6)	115
7. Unadjusted Advances Status Report (MIS - I/G/7)	115
8. Outstanding Loans/Liability Report (MIS - I/G/8).....	115
9. Projected Monthly Cash Flow Statement (MIS - I/G/9).....	115
viii. Audit Department – MIS Format I/H	116
1. Status Report on Examination of Accounts (I/H/1).....	116
II. Town Planning & Building Regulation Department - MIS Formats II/1 to II/6	116
1. Building Permission Applications Status Report (MIS - II/1).....	116
2. Building Permission Violation Reporting Efficiency Status Report (MIS - II/2)	116

3. Status Report on Building Completions and Violations (MIS - II/3)	116
4. Building Regulations Violation Status Report (MIS - II /4)	117
5. Status Report on Encroachment Removal– summarised (MIS - II/5)	117
6. Daily Report on Encroachments (MIS - II/6).....	117
III. Streetlight & Energy Audit Department - MIS Formats III/1 to III/9	117
1. Report of Streetlight Service in a ABC Municipal Body (MIS - III/1).....	117
2. Streetlight Service Maintenance Status Report (MIS – III/2).....	117
3. Streetlight Service Development Status Report (MIS – III/3)	117
4. Streetlight Maintenance Efficiency Report (MIS – III/4).....	117
5. Status Report on Streetlight Switching (Metering) Point Operations (MIS-III/5).....	118
6. Status Report on ward-wise Streetlight switching Points (Load and Consumption) (MIS – III/6).....	118
7. Data Collection Form for Streetlight switching Point (MIS – III/7).....	118
8. Status Report on Electrical Energy Consumption of all Departments (MIS – III/8).....	118
9. Status Report on Variation in Contract Demand & Power Factor in H.T. Connections (Water, Wastewater & others) (MIS – III/9)	118
IV. Fire Brigade Department - MIS Formats IV/1 to IV/4.....	118
1. Status Report on Number of Fires and Resources utilised (MIS - IV/1)	118
2. Status Report on Number of Fires and Loss of Lives/Resources	118
3. Status Report on High-Rise Buildings' Fire Safety (MIS - IV/3)	118
4. Status Report on Fire Safety in Hazardous Shops and Establishments (MIS - IV/4).....	119
V. Solid Waste Management Department - MIS Formats V/1 to V/7.....	119
Information to be collected and updated regularly by a Municipal Body.....	119
Monitoring of Solid Waste Management Service	121
Monitoring of Complaints.....	124
Monitoring public Response – Monthly Report.....	125
1. Status Report on Solid Waste Transportation (Summarised - Daily Statement) (MIS - V/1).....	125
2. Status Report on Solid Waste Transportation - Vehicle-wise (Daily Report) (MIS - V/2)	126
3. Solid Waste Management (Staff Position) Status Report (Daily Report) (MIS - V/3).....	126
4. Collection Point-wise Daily Status Report (MIS - V/4).....	126
5. Status Report on Solid Waste related Project Development Activities (MIS - V/5)	126
6. Overall Efficiency Report (Monthly) (MIS - V/6).....	126

7. Status Report on Maintenance of Public Toilets (MIS - V/7)	126
VI. Water Supply Department - Operations & Maintenance – MIS Formats VI/1 to VI/9 ..	126
1. Water Supply System Status Report (monthly)(MIS - VI/1).....	126
2. Status Report on Water Drawal and Supply (MIS - VI/2).....	127
3. Status Report on Water Drawal and Supply (detailed distribution point wise) (MIS - VI/3).....	127
4. Status Report on Water Loss (MIS - VI/4)	127
5. Status Report on Water Drawal and Supply from Tube Wells (MIS - VI/5)	127
6. Electricity Consumption Status Report (MIS - VI/6)	127
7. Illegal Connections Status Report (MIS - VI/7)	127
8. Status Report on New Water Connection (MIS - VI/8)	127
9. Status Report on Water Contamination (daily-month wise) (MIS - VI/9) ...	128
VII. Sewerage Service Department - Operations & Maintenance (O& M) - MIS Formats VII/1 to VII/7.....	128
1. Sewerage System Status Report (MIS - VII/1)	128
2. Status Report on Sewerage Generated and Treated (MIS - VII/2).....	128
3. Sewerage System - Electricity Efficiency Report (MIS - VII/3).....	129
4. Illegal Sewerage Connection Report (MIS - VII/4)	129
5. Industrial Sewerage Connections Monitoring Report (MIS - VII/5).....	129
6. New Sewerage Connection Report (MIS - VII/6).....	129
7. Status Report on Waste Water Treatment (MIS - VIII/7).....	129
VIII. Public Health Department - MIS Formats VIII/1 to VIII/22.....	129
1. Status Report on Issue of Health Licenses for Hotels (MIS - VIII/1)	130
2. Status Report on Inspection of Food-Joints (MIS - VIII/2)	130
3. Workings of Municipal Hospitals (MIS – VIII/3).....	130
4. Working of Municipal Clinics/Dispensaries Report (MIS - VIII/4).....	130
5. Report on Working of Medical Stores (MIS - VIII/5).....	130
6. Birth and Death Statistics (MIS - VIII/6)	131
7. Status Report on Malaria Diseases Surveillance (MIS - VIII/7).....	131
8. Status Report on Mosquito Mass (MIS – VIII/8)	131
9. Status Report on Mosquito Larvae Mass (MIS – VIII/9).....	131
10. Status Report on Dengue Patients in the City(MIS – VIII/10)	131
11. Status Report of infectious Diseases (MIS - VIII/11)	131
12. Status Report on National Tuberculosis Contract Programme (MIS - VIII/12)	131
13. Status Report on HIV-positive/AIDS-affected Patients in the City (MIS – VIII/13).....	131
14. Public Analysts Report (MIS - VIII/14).....	132

15. Status Report on Food Adulteration Control Efforts (MIS - VIII/15)	132
16. Status Report of Family Planning, Vaccinations, Ante- Natal & Post-Natal Care (MIS – VIII/16)	132
17. Workings of Anganwadies Report (Summarised) (MIS - VIII/17).....	132
18. Workings of <i>Anganwadies</i> Report (Detailed) (MIS - VIII/18).....	132
19. Status Report on Supplementary Nutrition Programme (MIS - VIII/19)...	132
20. Status Report on Immunisation, Health Check-up and Referral Activity of all Anganwadies together (MIS - VIII/20).....	132
21. Status Report on Ambulance Service (MIS - VIII/21)	133
22. Status Report on Management of Stray Animals (MIS – VIII/22)	133
IX. Road Department - MIS Formats IX/1 to IX/3	133
1. Status Report on Maintenance & Development of Roads and Footpaths (MIS - IX/1).....	133
2. Status Report on Roads, Footpaths, Bridges, Culverts etc. - Maintenance & Development (MIS - IX/2)	133
3. Status Report on Hot-Mix Plant Operation (MIS - IX/3).....	133
X. Storm Water Drainage & Lakes Department – MIS Format X/1.....	133
1. Status Report on Storm Water Drains and Lakes (MIS - X/1).....	133
XI. Public Building & Public Housing - MIS Format XI/1.....	134
1. Status Report on Public Building and Public Housing Activity (MIS Format XI/1)	134
XII. Garden, Zoo, recreational Infrastructure etc. – MIS Format XII/1	134
Status Report on Gardens, Tree Planting and Cutting, Zoo and Recreational Infrastructure (MIS - XII/1)	134
XIII. Primary Education - MIS Formats VIII/1 to VIII/3	134
1. Status Report on Workings of Municipal Schools (MIS - XIII/1).....	134
2. Status Report on Students studying at Municipal Schools (MIS - XIII/2)...	134
3. Status Report on Infrastructure & Educational Facilities at Municipal Schools (MIS - XIII/3).....	134
XIV. Social Welfare, Slums Improvement etc. - MIS Formats XIV/1 to XIV/4.....	135
1. Demographic Status Report on Slums in the City (MIS – XIV/1).....	135
2. Incomes and Employment Status Report on Slums in the City (MIS - XIV/2)	135
3. Status Report on Slums in the City (MIS - XIV/3).....	135
4. Status Report on Infrastructure Facilities in Slums (MIS - XIV/4).....	135
XV. Projects/Development Works Monitoring - MIS Formats XV/1 to XV/7.....	135
1. Progress Report on Development Works (MIS - XV/I)	135
2. Progress Report on Development Works (Grand Summary) (MIS - XV/2)	136
3. Capital (Development) Works Progress Report (individual Work-wise) (MIS - XV/3).....	136

4. Progress Report on Development Works (department, stage and budget-wise) (MIS - XV/4)	136
5. Progress Report on Developmental Works (Department-wise Summary) (MIS - XV/5).....	136
6. Status Report on Delayed Development Works (MIS - XV/6)	136
7. Status Report on Development Works with more than 10 percent Cost Variations (MIS - XV/7).....	136
XVI. Public/City Transport Department/Undertaking - MIS Formats XVI/1 to XVI/3	137
1. Comparative Information on Revenue earned from Sale of Tickets and Passes (MIS - XVI/1)	137
2. Performance Measurement of City Transport Service on basis of various Indicators (summarised) (MIS - XVI/2)	137
3. Performance Measurement of City Transport on basis of various Indicators (detailed) (MIS - XVI/3).....	137
XVII. Miscellaneous/other Departments - MIS Formats XVII/1 to XVII/5.....	137
1. Stock Position of Important Raw Materials Report (MIS - XVII/1)	137
2. Complaints Redressal Report (MIS - XVII/2)	137
3. Vehicle Efficiency Report (MIS - XVII/3)	138
4. Clearance of Letters, Notices, Applications etc by various Departments (MIS – XVII/4 & 5).....	138
<i>Way Forward</i>	138

5

Model Municipal Management Information System Formats

Model Municipal MIS Formats

Information formats are the core of any Municipal Management Information System (MMIS). The concerned department or officer periodically should submit these formats to the central MIS department and the concerned Head of Department (HOD). There are two types of formats:

- Intermediary formats
- Final formats

Intermediary formats are those in which information is submitted by the basic unit's Head of Office to the middle management's HOD. Final formats are those in which the middle management's HOD presents consolidated or summarised information to the top management (Municipal Commissioner). The various MIS formats will be discussed under the respective municipal departments as follows:

I. General Administration

I/A Establishment Department

I/B Legal Department

I/C Tax Assessment

I/D Tax Recovery

I/E Self-Assessment System for Tax Payment

I/F Octroi

I/G Accounts/Finance Department

I/H Audit Department

II. Town Planning & Building Regulation Department

III. Streetlight & Energy Audit Department

IV. Fire Brigade Department

V. Solid Waste Management Department

VI. Water Supply Department - Operations & Maintenance (O&M)

VII. Sewerage Service - Operations & Maintenance (O&M)

VIII. Public Health Department

IX. Road Department (Roads, Footpaths, Bridges and Culverts)

X. Storm Water Drainage & Lakes Department

XI. Public Building & Public Housing

- XII. Garden, Zoo, Recreational Infrastructure etc.
- XIII. Primary Education
- XIV. Social Welfare, Slums Improvement etc.
- XV. Projects/Development Works Monitoring
- XVI. Public/City Transport Department/Undertaking
- XVII. Miscellaneous/Other Departments

I. General Administration

i. Establishment Department – MIS Formats I/A/1 to I/A/14

The Establishment or General Administration Department of a municipal body looks after staff matters and the general administration. It requires a formal system of database management, as it has to take care of various statutory provisions regarding staff matters. In some states, once a year this is a mandatory part of the budget process. One of the first three generic formats can be used to update the establishment schedule.

The basic information the Establishment Department of any municipal body should have is the total numbers of posts sanctioned, filled and vacant. Usually municipal bodies do possess this information but it is not up-to-date. The suitable MIS formats to maintain and regularly update basic information are provided as follows:

1. Summarised Report – Total Posts sanctioned, filled and vacant (MIS - I/A/1)

This is a basic format and is to be prepared on a monthly basis by the Establishment Department, covering staff information of the entire municipal body. The same format is to be utilised by other departments as a primary format to document staffing information of their own department.

2. Department-wise Posts sanctioned, filled and vacant (MIS - I/A/2)

This is another related format to be prepared by the Establishment Department for cross-reference purpose and department-wise information on staffing.

3. Posts sanctioned, filled and vacant (MIS - I/A/3)

Sometimes employees are deployed from one department to the other without transferring their salary expenditure to the other department. This is appropriate when there are no vacant sanctioned posts in the department and when there is a temporary need of additional staff. This practice, however, can become a permanent feature or it is even done if there are vacant sanctioned posts. It also happens that a department takes staff on deployment from another department and that at the same time some of its employees are deployed to another department. If this is done on a recurrent scale, this peculiar practice creates an ambiguous picture about staffing. This format can help to document staff deployment and to clarify the ambiguity.

Certain departments in large municipal bodies, such as water supply, sewerage or solid waste, become so big that they require a separate Establishment Section. They

should still utilise these three MIS formats as a primary format to submit information to the Central Establishment Section.

4. Status Report on Schedule Cast/Schedule Tribe/Other Backward Class Posts - sanctioned, filled and vacant (Summarised) (MIS - I/A/4)

Municipal bodies, being a government organisation, are required to adhere to the Schedule Cast (SC) Schedule Tribe (ST) Other Backward Casts (OBC) reservation norms while filling their staff vacancies. Failure to adhere to these statutory reservation provisions can lead to a legal penalty. In order to attain the objectives of the policy in letter and spirit, a formal MIS system is necessary; MIS - I/A/4 is designed for this objective. It is to be prepared by the Central Establishment Department on a monthly or quarterly basis.

5. Status Report on Daily-Wage Employees (Summarised) (MIS - I/A/5)

Every municipal body has daily-wage employees. Employees who fall under this special category attract labour law provisions, making their data and information very important. Municipal bodies have to be very careful, because daily-wage or temporary employees will become permanent employees in the future, i.e. the organisation's permanent expenditure liability.

This is a final format presenting the summarised position regarding the average usage of daily-wage employees and their percentage shares in the total manpower. If the percentage of daily-wagers is higher than 10 percent, the top management should either give them a permanent post or outsource the activity to save them from permanent liability in the future.

6. Status Report on daily-Wage Employees (detailed) (MIS - I/A/6)

This intermediate format, the base to prepare MIS - 1/A/4 and 1/A/5, is utilised by the HOD's of the middle level management. It should be prepared by the Establishment Department and the departments that employ daily-wagers on a large scale.

7. Status Report on daily-Wage Employee becoming permanent (MIS - I/A/7)

This format deals with the phenomenon that daily-wagers become permanent due to a legal process and it needs to be filled by the Establishment Department. The top management should closely watch this information and plan its future course of action accordingly.

8. Employees under disciplinary Action (MIS - I/A/8)

Even though this is not a desirable feature, there are employees lingering under inconclusive disciplinary action in all governmental forms of organisations. The reasons range from legal to political, like the lack of follow-up due to the absence of a database and a burden of routine work. The MIS format is designed to provide executives an overview of the employees that are under various stages of disciplinary actions, along with an aging analysis. This report is to be prepared by the Central Establishment Department, preferably on a monthly basis.

9. Terminal Benefits Payment Status Report (MIS - I/A/9)

Even though Pending Terminal Benefits are a very important task of the Establishment and Accounts Department, it is invariably characterised by delay. Nowadays, inordinate delay in paying terminal benefits to retired employees can lead to severe legal sanctions. Every organisation should basically make a sincere effort to release terminal benefits to employees or the legal heirs in time on humanitarian and employee welfare grounds, not because of the legal penalty. MIS - I/A/9 is designed to monitor payments of terminal benefits to retired or deceased employees of municipal bodies. The status report should be prepared on a monthly basis by the Central Establishment Department, with help of the Accounts Department.

10. Status Report on Employee Absenteeism (Summarised) (MIS - I/A/10)

Absenteeism is a problem that all types of organisations encounter: governmental, non-governmental, commercial and industrial organisations. It is a more acute problem in municipal bodies as they employ a large number of sub-staff like sweepers, scavengers and labourers. At times the level of absenteeism reaches well above 30 percent. In order to plan day-to-day maintenance work and work scheduling properly, Departmental Heads should know the exact level of absenteeism. MIS - I/A/10 is a final detailed format that provides executive heads a summarised picture regarding employee absenteeism and is to be prepared by the Establishment Department on the basis of departmental reports.

11. Status Report on Employee Absenteeism (Detailed daily report)(MIS -I/A/11)

MIS - I/A/11 is an intermediary format to provide information to the HOD or functional head and it should be prepared by the concerned department on a daily basis.

12. Governments' Letters pending for Reply Report (MIS - I/A/12)

A municipal body receives letters from various departments and offices of the state government, the general public and NGO's. It has been observed that most of the municipal bodies often reply late – and in an inappropriate language - to received letters and enquiries, creating a bad image and little goodwill. One way to ensure timely reply is MIS - I/A/12. Each department and an identifiable important section of the department should prepare this format and it should be submitted primarily to the HOD. This format is basically useful for middle-level managers in order to monitor the status regarding letters received.

13. Pending Audit Para/Objections Status Report (MIS - I/A/13)

One or more audit authorities of a municipal body are responsible for, amongst others, all accounts. They raise objections because of procedural lapses, accounting or financial irregularities. In theory, the administration is required to comply with each audit para or objection. In actual practice, however, pending audit para or objections are a common feature in almost all municipal bodies. The older the audit objections become, the more difficult it is to comply with them. Therefore, immediate compliance is the best solution and thus every municipal body must have a good monitoring system. MIS - I/A/13 is created to facilitate the information collection regarding the

compliance of audit objection on a regular basis. This detailed format is to be used by the all departments, sub-departments or by the officer whose audit objection is issued by the audit authorities. It is useful for the HOD's and HOO's (Head of Office) of the middle-level management. A summarised statement to know how timely departments are complying with the audit objections, however, is useful for municipal commissioners. Accordingly each department should prepare this format and send a copy to the central MIS section for consolidation.

14. Status Report on Training to Municipal Employees (MIS - I/A/14)

Training or capacity building of municipal employees is usually a highly neglected area in municipal bodies. Nevertheless, it is essential to improve the employees' efficiency. It is necessary to keep track of who received what kind of training and who has not received any training. This format is designed to create a database concerning the actual status of training given to municipal employees.

ii. Legal Department - MIS Formats I/B/1 to I/B/5

As a municipal body is a regulating and enforcement body for various acts and laws, it is forced to take legal actions against defaulters. At the same time they also attract various legal causes from aggravated parties against them. Regulation and enforcement of legal provisions do not only require actions against defaulters as prescribed by law, but also logical and successful legal proceedings in the court of law. Unfortunately, municipal bodies very often fail in either the defence or the prosecution of legal cases. One of the major reasons is the lack of an adequate database and its analysis.

1. Pending Cases filed by Municipal Body - Ageing Analysis (MIS - I/B/1 & I/B/2)

These formats are designed to create a database regarding legal cases filed against and by a municipal body. Sizeable municipal bodies usually have a separate Legal Department and they should prepare these formats on a monthly basis. In smaller municipal bodies they should be prepared by the General Administration Department.

2. Annual Status Report on legal Cases filed against Municipal Body (MIS - I/B/3)

This format is designed to look into the qualitative aspects of how legal cases filed against the municipal body are being handled. Judgements should be analysed at least once a year to see in how many cases the Legal Department or the lawyers of a municipal body have attained success.

3. Annual Status Report on legal Cases filed by ABC Municipal Body (MIS - I/B/4)

This is sequel to I/B/3 and is structured to hold data about various legal cases filed by the municipal body against others and results achieved in such cases.

4. Performance Evaluation of Lawyers hired by ABC Municipal Body (MIS - I/B/5)

In bigger municipal corporations many legal retainers or lawyers are being hired due to the high number of litigations. In such municipal bodies, lawyer-wise efficiency

reports should be prepared once a year. MIS - I/B/5 is designed to facilitate a performance evaluation of the legal professionals hired by a municipal body.

iii. Tax Assessment - MIS Formats I/C1 to I/C/5

Tax assessment, billing and collection performance are very important areas of a municipal body, since its financial health largely depends on it. Accordingly, top management must get timely and precise information regarding revenue receipts or resource mobilisation efforts, so that appropriate decisions can be taken. The MIS formats pertaining to property-linked taxes and user-charges are enumerated as below.

The base of property-linked taxes is the Annual Rental Value (ARV), carried out by the Assessment Department. Monitoring the property assessment is a very important function and MIS 1/C/1 to 1/C/5 are designed for this purpose. Out of these four formats the first two are a must for every municipal body, while other two are discretionary. It depends on the particular municipal body whether or not they have such a detailed MIS.

1. Status Report on Assessment of Properties (detailed) (MIS - I/C/1)

This format is designed to provide information about assessment work carried out during the month and about how much is pending at the end of month. It is also designed to show the progress on the applications received regarding the clearance of objections.

2. Status Report on Assessment of Properties (summarised) (MIS - I/C/2)

This format is sequel to the earlier one, showing summarised information about assessment work carried out during the month.

3. Status Report on Tax Litigations (MIS - 1/C/3)

This format deals with litigations regarding property assessment. Tax litigations cause a block of a sizeable revenue and turn out to be harmful for both the taxpayers and the municipal bodies. Nowadays municipal bodies are going for 'Lok Adalat' and various types of out-of-court settlement. MIS 1/C/3 will serve as a base for such an exercise.

4. Status Report on Assessment Work (employee-wise) (MIS - 1/C/4)

This format is for an employee-wise qualitative and quantitative analysis. The work of Assessment Officers is very crucial as the revenue base of a municipal body depends on it. If the Assessment Officer is very liberal and assesses properties below par, it results in a financial loss for the municipal body in the form of a low tax base. If the officer is negative or impractical and assesses properties above average, it results in tax objections and litigations. This mode also results in a financial loss for the municipal body in the form of blocking tax revenue.

5. Status Report on Clearance of Tax Objections raised by People (MIS - I/C/5)

This is a sequel to format I/C/5. After property assessment by a Municipal Assessment Officer, the owner of the property is entitled to raise objection against the assessment order. The number of tax objections indicates the quality of the assessment. At the same time they need to be cleared at the earliest, so that the property tax revenue does not get blocked. Usually a separate team of officers known as 'Appellate Officers' deals with the tax objections. The format is drafted to monitor work of tax objections clearance and to create a database. The format also provides information about the clearance of tax objections in favour of the taxpayer, against the taxpayer and court cases arising out of it.

iv. Tax Recovery – MIS Formats I/D/1 to I/D/8

The next group of MIS formats is pertaining to billing, the recovery of house tax and other taxes linked to property and user charges.

1. Status Report on Preparation of various types of Bills by Electronic Data Processing (EDP) Department (MIS - I/D/1)

The first format (I/D/1) concerns data processing work of tax bills and other jobs, which is to be prepared by the EDP or Computer Department on a monthly basis. This statement is very important in case municipal bodies work on an 'Off-Line'-basis and centralised bills processing, as the tax bill preparation requires the co-ordination of various jobs that need to be carried out on a parallel and linear basis. If it is not taken care of, inordinate delay takes place and the tax-billing schedule goes disarray.

2. Tax Recovery Performance Report (Summarised) (MIS - I/D/2)

MIS - I/D/2 is a format for providing summarised data about entire recovery performance.

3. Statement on Total Tax Demand (Detailed) (MIS - I/D/3)

MIS - I/D/3 is designed to provide details regarding the total tax demand.

4. Statement on Total Tax Recovery (Detailed) (MIS - I/D/4)

MIS - I/D/4 is structured to contain information about tax recovery efforts.

5. Statement on Pending Tax Dues (Detailed) (MIS - I/D/5)

MIS - I/D/5 provides information about tax dues pending at the end of the period.

6. Statement on Ward-wise/Block-wise Tax Recovery (MIS - I/D/6)

MIS - I/D/6 is a format to analyse the block- or ward-wise tax recovery performance within a zone. At present not all municipal bodies have this kind of microstructure. After fully computerising tax billing and accounting processes, municipal bodies should go

for the formation of tax blocks, assign these blocks proportionately to the tax recovery inspector and monitor the performance recovery inspector- and tax block wise.

7. Tax Recovery Status Report (employee-wise) (MIS - I/D/7)

MIS - I/D/7 is an improved format to monitor the existing tax recovery personnel-wise. This format should be prepared by the Revenue Section of each zone in association with the electronic data processing (EDP), Computer and Accounts Department. Each zone should prepare this statement on its own zone and submit it to the Central MIS Department for consolidation.

8. Value-based Analysis of Tax Payers (Tax Bills in Arrears) (MIS - I/D/8)

MIS - I/D/8 is designed to plan recovery drive and analyse tax dues as per value. This type of analysis becomes possible after computerisation of the tax billing and accounting system. It can help municipal bodies to bring focus in its recovery drive and to catch big defaulters.

v. Self-Assessment System for Tax Payment – MIS Formats I/E/1 & I/E/2

In recent years municipal bodies have been introducing a system for self-assessment and the payment of taxes. In this system the taxpayer assesses its own tax and pays tax to the municipal body within a stipulated time. The municipal body does not serve tax bills. If the taxpayer fails to submit the self-assessment and taxes, however, he is liable to pay a penalty and the municipal body is expected to assess the tax and serve the bill. A municipal body that has introduced this system needs to monitor its operation differently. MIS - 1/E/1&2 are designed to address this requirement.

1. Status Report on Self-Assessment Forms Submission (MIS - 1/E/1)

This format is designed to provide information on the number of people who have filled their self-assessment forms within the stipulated time limit against the total number of people who are liable to file these forms. It will also provide information on the people who have filled their forms with amendments, in case of for example property extension or a change in the tenancy status. This information is useful to double-check the forms on their correctness and to get to know new taxpayers. To find out who has not filled the first self-assessment forms even after occupying and using property, this data can be crosschecked with building completion or occupation certificate data.

2. Status Report on Steps taken against Self Assessment System Defaulters (MIS - 1/E/2)

This format is a sequel to the above format. It is drafted to monitor recovery work regarding taxpayers that have not filled self-assessment forms within the stipulated time limit and taxpayers that have filled their self-assessment forms with amendments. The municipal body must verify the amended self-assessment regarding the change in tax.

vi. Octroi - MIS Formats I/F/1 to I/F/6

1. Octroi Revenue Status Report (MIS - I/F/1)

Octroi constitutes almost 50 percent of the revenue of the municipal bodies in the octroi levying states. Octroi is assessed and recovered on the spot, when goods enter the city. This feature saves the municipal body from long and cumbersome procedures of tax recovery, but at the same time it leads to possible tax evasion. In case of octroi revenue, the comparison of current data with data from the past becomes very important, as it is difficult to project octroi revenue precisely. MIS - I/F/1 provides an overall status report regarding octroi revenue.

2. Statement on Octroi Revenue (detailed) - Check-Post-wise (MIS – I/F/2)

This format is designed to document octroi revenue check-post-wise. A check-post-wise analysis, backed by the commodity-wise analysis of octroi receipt, reveals a pattern in octroi receipts through which it becomes possible to supervise octroi collection efforts and pilferage.

3. Octroi No-Bill Cases Assessment Status Report (MIS - I/F/3)

People bringing goods into the city do not always have the proper bill documents. In such cases, octroi assessment becomes difficult and it is usually kept pending. The goods are only allowed to enter the city by paying a token amount. The levy of octroi is finalised later by scrutinising bills at the Central Office. This system often becomes a potent ground for tax evasion and thus needs monitoring. MIS I/F/3 is designed to deal with such no-bill octroi cases and comprises information on for example the number of no-bill cases, pending cases and octroi assessed.

4. Octroi Revenue – Commodity/Articles-wise Analysis Report (MIS - I/F/4)

MIS I/F/6 is designed to crosscheck MIS - I/F/4 data and for an article-wise analysis of octroi revenue. The octroi revenue depends on the volume and value of the goods brought into the city. Except for extraordinary circumstances, the consumption level of the city does not go down but increases over the period. Using an article-wise analysis, one can detect octroi evasion. Earlier this analysis was not possible due to the amount of work but now it is, thanks to the computerisation of octroi check-posts.

5. Octroi Vigilance Squad Status Report (MIS – I/F/5)

Municipal bodies usually have a flying vigilance squad to detect octroi evasion. This squad checks any vehicle, establishment, shop or warehouse within the city to see whether the proper octroi has been paid for or not. Such a squad is necessary to put moral and psychological pressure on the staff of the Octroi Department and on octroi evaders, but at the same time the municipal body should track the squad's performance. MIS - I/F/5 is designed to serve this purpose.

6. Non-Tax Revenue Report (MIS - I/F/6)

Besides various tax sources, municipal bodies possess a few non-tax revenue sources. These sources should not cause any recovery problem, but in most of the

cases one finds pending recovery problems resulting into the blocking of sizeable revenue. For example, a municipal body gives parking plots to a contractor and does not pay the lease rent regularly, resulting into arrears. Similarly, hoarding placement rights, shops or land are given on the rent, which are not recovered in time. The way mounting arrears of non-tax resources are associated with tax sources, they become a perennial problem. MIS - I/F/6 is structured to monitor certain important non-tax revenue sources. It is to be prepared by each Revenue Department, which is responsible for the recovery of non-tax sources and to be consolidated by the Central MIS Department for submission to the municipal commissioner and other HOD's.

vii. Accounts/Finance Department - MIS Formats I/G/1 to I/G/9

The finance function is the central gravitating force or the heart of a municipal body and it is handled by the Central Accounts or Finance Department. This department provides information on both revenue and expenditure operations, combined in one format, making its MIS format so important. Complex, voluminous statements can be generated from the accounting system and data, but this excessive information is not necessary for day-to-day monitoring. The various formats pertaining to the Accounts Department are as follows:

1. Monthly Financial Position (MIS - I/G/1)

This is a very simple but effective statement that is designed to provide an overall financial position at a glance. It includes information regarding budgeted and non-budgeted receipt and expenditure items pertaining to the past months, the current month and on a cumulative basis. Essentially it is a cash-in- and out-flow statement, but it shows receipts and expenditures under the category income and non-income.

2. Statement Showing Receipts against Budget (MIS - I/G/2)

This statement is a sequel to the first one and it is designed to provide detailed qualitative information on the revenue with various types of comparative data and analyses. It allows the municipal top management to know the progress of revenue receipts and to decide on the steps required for improvements.

3. Statement showing Expenditure against Budget (MIS - I/G/3)

This statement is also linked to MIS - I/G/1. It comprises past year, budget and current year expenditure figures with growth rates and comparisons in percentages. It is again designed to provide detailed information to make qualitative decisions regarding expenditure.

4. Statement on Investments in Bank Fixed Deposits (MIS - I/G/4)

Municipal bodies are allowed to invest their surplus funds in banks' fixed deposits. This statement is structured to provide details regarding investments with opening and closing balances, new investments and disinvestments. It should cover all funds and the investment. This is to be prepared on a monthly basis.

5. Status Report on Returned/Dishonoured Cheques & Recovery (MIS - I/G/5)

There are several Collection and Accounts Departments that act as a Treasury Department, receiving receipts indirectly from the Collection Department and not directly from the public. Consequently, when any cheque returns from the bank, it has to be sent back to the Collection Department for recovery. This is a time-consuming process and the multiplicity of Collection Departments also results into co-ordination and monitoring problems. Recovery of returned cheques is a peculiar problem municipal bodies have to deal with, hence MIS - 1/G/5 and 1/G/6. The first one is to be filled by every revenue-collecting department on a monthly basis. It should be submitted to the concerned HOD and reconciled with the Accounts Department.

6. Summarised Status Report on Returned/Dishonoured Cheques (monthly Report) (MIS - I/G/6)

The second format that is sequel to MIS – I/G/5 provides consolidated information for review; it should be prepared by the Accounts Department and submitted to the Municipal Commissioner for the departmental review meeting.

7. Unadjusted Advances Status Report (MIS - I/G/7)

Advances are drawn to carry out expenditures that cannot be appropriated to the definite budget head, neither partially nor fully. The lack of financial discipline and lapsing budget provisions at the end of the year results into a large amount of advances remaining unadjusted. Unadjusted advances of a considerable amount have become a perpetual problem for municipal bodies. MIS - 1/G/7 is designed to monitor them department-wise. This format is to be prepared by the Accounts Department and needs to be submitted to the Municipal Commissioner.

8. Outstanding Loans/Liability Report (MIS - I/G/8)

Municipal bodies raise loans from various agencies. New loans are drawn and old loans are repaid monthly, quarterly, half-yearly or on a yearly basis. The loans outstanding position undergoes a significant change in a quarter year. MIS - 1/G/8 is designed to provide information on new loans, the total repayment during a certain period and the opening and closing balance of outstanding loans.

9. Projected Monthly Cash Flow Statement (MIS - I/G/9)

Along with the past and current revenue expenditure, the management also needs to know about the future. MIS - 1/G/9 is structured to provide information on the coming months regarding projected receipts under the category 'income and non-income receipts' and the expenditure under the category 'unavoidable and avoidable'. It will also provide information on surplus and deficits. This statement should be prepared by the Accounts Department around the 28th or 29th of the month and submitted to the Municipal Commissioner and other HOD's. It can help the top management to give additional targets to Revenue Departments and to curb expenditure in order to avoid deficits.

viii. Audit Department – MIS Format I/H

1. Status Report on Examination of Accounts (I/H/1)

It is very difficult to quantify audit work, but at the same time the Audit Department performs a very important function in attaining good urban governance. MIS – 1/H/1 is designed to document their work.

II. Town Planning & Building Regulation Department - MIS Formats II/1 to II/6

One very important regulatory function of municipal bodies - the special purpose of urban development authorities in some places - that attracts pressure from all corners of society, is town planning and building permissions. Town planning serves as a foundation for both the city's physical development and aesthetic outlook. Keeping this importance in mind the following MIS formats have been structured:

1. Building Permission Applications Status Report (MIS - II/1)

One is required to seek prior permission for building plans of a proposed construction. Each plan must be scrutinised thoroughly before getting the building construction permission, but at the same time such applications should not remain pending for an inordinate period. This MIS format is designed for this dual purpose. It is to be prepared zone-wise by the Assistant Town Planners and it should be submitted to the Town Planner. The Town Planner should prepare consolidated statements for the whole city and needs to submit these to the Municipal Commissioner and other relevant officers.

2. Building Permission Violation Reporting Efficiency Status Report (MIS - II/2)

MIS - II/2 is drawn to know the efficiency of Building or Town Planning Inspectors in noticing or preventing building regulation violations. Building permission violations should get checked, reported and stopped as soon as any person starts a foundation work of a new construction. In order to check these violations effectively, the best criterion is at what stage the violation has been reported and stopped, not what amount, fine or compounding fee has been recovered. Checking violations at an early stage may fetch less income but will improve compliances. This format is designed to have such a qualitative analysis of building regulation violations pertaining to new constructions. It is to be prepared zone-wise by Assistant Town Planners and to be consolidated by the Town Planner to get a city-level picture.

3. Status Report on Building Completions and Violations (MIS - II/3)

The next regulatory point concerning Building Regulations is the Building Completion or Occupancy Certificate. Municipal services should not be linked to the property that has not received a due Completion Certificate from the Town Planning and Building Regulation Department. MIS - II/3 will be useful to identify for example pending applications for a Completion Certificate, properties without a Completion Certificate and actions taken. This is to be prepared zone-wise on a monthly basis by the respective Assistant Town Planners and to be consolidated by the Town Planning Office. A copy should be send to the Town Planner, the Additional and Municipal Commissioner.

4. Building Regulations Violation Status Report (MIS - II /4)

Building regulation violations are not only confined to building construction permissions and completion. There are various types of building regulation violations - like a change of purpose and encroachments - which have to be detected by carrying out a regular programme of building inspection. MIS - II/4 is designed to take stock of such violations and inspector-wise efficiency to detect them. This status report is to be prepared zone-wise on a monthly basis by the concerned Assistant Town Planners and should be submitted to the Town Planner. The Town Planner should prepare a consolidated city-level report and submit it to the Municipal Commissioner and other officers.

5. Status Report on Encroachment Removal– summarised (MIS - II/5)

In any city various types of encroachments take place. Encroachment removal and, more importantly, not allowing encroachments to take place is a very important function of a municipal body. MIS - II/5 is a summarised report that should be prepared on monthly basis.

6. Daily Report on Encroachments (MIS - II/6)

MIS - II/6 is to be prepared on a daily basis. This format should state all encroachments reported and recorded either by a municipal staff or a common man. The Assistant Town Planners or Inspectors should prepare these statements and a summarised statement should be submitted to the Municipal Commissioner.

III. Streetlight & Energy Audit Department - MIS Formats III/1 to III/9

This is one of the basic urban infrastructure services that have a highly visible impact. Accordingly, the maintenance and development of this service are very important. The following formats have been designed for this service:

1. Report of Streetlight Service in a ABC Municipal Body (MIS - III/1)

MIS - III/1 concerns the overall statistics of streetlight installations of a municipal body.

2. Streetlight Service Maintenance Status Report (MIS – III/2)

MIS - III/2 provides information on the maintenance of the streetlight service carried out during the month.

3. Streetlight Service Development Status Report (MIS – III/3)

MIS - III/3 provides data regarding the progress of developmental works pertaining to the service.

4. Streetlight Maintenance Efficiency Report (MIS – III/4)

MIS - III/4 is designed to know the efficiency of streetlight operations and maintenance through the actual consumption of street light material against the standard or average consumption. This statement will help the management to control the costs of the

current streetlight service. It should be prepared quarterly and annually by the Executive Engineer - Streetlight and submitted to the City Engineer and Municipal Commissioner.

5. *Status Report on Streetlight Switching (Metering) Point Operations (MIS-III/5)*
6. *Status Report on ward-wise Streetlight switching Points (Load and Consumption) (MIS – III/6)*
7. *Data Collection Form for Streetlight switching Point (MIS – III/7)*

MIS - III/5, 6 & 7 are detailed and specific, providing information about various aspects of streetlight switching point operations.

8. *Status Report on Electrical Energy Consumption of all Departments (MIS – III/8)*
9. *Status Report on Variation in Contract Demand & Power Factor in H.T. Connections (Water, Wastewater & others) (MIS – III/9)*

MIS - III/8 & 9 are for an efficiency evaluation regarding the electricity consumption, done by the Streetlight Department and all other departments. The costs of electricity consumption nearly constitute more than 70 percent of the budget of streetlight and other services, like water supply and sewerage. Any reduction in electricity costs could lead to a sizeable amount of savings. MIS - III/8 & 9 are specifically structured to serve the Energy Audit Department and to achieve cost efficiency in electrical consumption. A copy of these formats should be submitted to the Central MIS section in order to maintain a database.

IV. Fire Brigade Department - MIS Formats IV/1 to IV/4

1. *Status Report on Number of Fires and Resources utilised (MIS - IV/1)*

This is a comparatively small but important department, as it caters emergency situations. Naturally canons to evaluate this service are different, such as the time from departure to the place of fire after having received the information. In the present Indian situation it is not possible to track such parameters; only the operational efficiency and a database regarding fires occurred can be measured. MIS IV/1 is structured to provide this information.

2. *Status Report on Number of Fires and Loss of Lives/Resources (MIS – IV/2)*

This format records another facet associated with a fire that takes place and causes a loss of life or resources. MIS – IV/2 provides valuable information about the damage caused by the fires in the city.

3. *Status Report on High-Rise Buildings' Fire Safety (MIS - IV/3)*

The emergence of high-rise buildings and their increasing number have posed severe challenges to the Fire Brigade Department. In order to reduce probable fire hazards in these buildings, elaborate fire safety norms have been promulgated under building regulations. Unfortunately, these norms are not implemented adequately. MIS - IV/3 is designed to facilitate the monitoring of the implementation of fire safety norms in

high-rise buildings. It should be prepared by the Fire Department or an officer bestowed with the responsibility of these norms.

4. Status Report on Fire Safety in Hazardous Shops and Establishments (MIS - IV/4)

There are certain businesses or professions that are covered by the Explosives Act and Petroleum Act and require a Fire Safety Clearance Certificate. This certificate is to be issued by the Municipal Fire Officer after due inspection. The Fire Brigade Department and municipal body must have a database about the shops and establishments to whom such certificate has been issued. MIS IV/4 is designed to facilitate the monitoring and database updating of such hazardous shops and establishments.

V. Solid Waste Management Department - MIS Formats V/1 to V/7

A municipal service is of fundamental importance for issues regarding the public health and general hygiene of the city. Municipal bodies have been made efforts to mechanise operations of the solid waste service, but it is still highly labour-intensive and requires man-machine co-ordination. In recent years environmental groups have become highly vocal and the Supreme Court has issued guidelines with a strict, time-bound implementation plan. The expert committee on Solid Waste Management, appointed by the Supreme Court of India, has recommended MIS for Solid Waste Management as follows.

Information to be collected and updated regularly by a Municipal Body

General Information on Solid Waste Management:

- Area of the city
- Population of the city
- Decadal growth of the population
- Number of wards, their area and population
- Ward-wise information regarding:
 - Population density in different wards
 - Number of households, shops and establishments
 - Vegetable, fruit, meat and fish markets
 - Number of hotels and restaurants
 - Number of hospitals and nursing homes
 - Number of industries
 - Number of slum pockets and their population
 - Road length width-wise
 - Percentage of area covered with underground sewage system
 - Percentage of area having surface drains
 - Percentage of area having no drainage facility
 - Total number of public toilets and toilet seats
 - Number of public urinals
 - Number of nuisance spots

Waste Generation:

- Average quantity of daily produced waste
- Seasonal variations in daily waste generation
- Total quantity of waste produced annually during last three years
- Break-up of quantity of waste generated
- Household, shops and establishments waste
- Vegetable and food market waste
- Meat, fish and slaughter house waste
- Construction & demolition waste
- Hospital waste
- Industrial waste
- Average number of carcass removed daily

Staff Position:

- Number of sanitation workers deployed in the city for waste collection
- Number of sanitation workers deployed for waste transportation
- Ward-wise allocation of sanitation workers
- Sweeper population ratio in each ward
- Sweeper road length ratio in each ward
- Sweeper supervisor ratio in each ward

Waste Storage Depots:

- Number of sites designated or notified for temporary waste (dustbins)
- Type and size of dustbin provided in each ward
- Ward-wise quantum of waste generated daily

Transportation:

- Number, type size and age of vehicles available at local body for waste transportation
- Number of trips made by each vehicle in one shift
- Number of vehicles used in first, second and third shift
- Quantity of waste transported in each shift
- Total quantity of waste transported daily
- Percentage of waste transported daily

Waste Processing and Disposal:

- Number of waste processing and disposal sites in the city
- Their distances from the city centre
- The area of these sites
- The quantity of waste treated or disposed of at each site
- The expected life duration of each land filled site

Financial Aspects:

- Operating costs
- Collection costs per ton/day
- Transportation costs per ton/day
- Disposal costs per ton/day
- Allocation of revenue and capital budget for Solid Waste Management vis-à-vis the city's corporation's budget

Monitoring of Solid Waste Management Service

For a day-to-day monitoring of the Solid Waste Management Service, reports need to be sent daily and the following data may be collected, compiled and analysed:

Waste collection:

- Number of sweepers required to report for duty
- Number of sweepers actually reporting for duty
- Number of sweepers absent
- Areas left unattended
- Arrangements made or proposed to clear backlog

Inspection by supervisors of street sweeping and primary collection:

- Number of persons supervisor is required to supervise
- Number of persons supervised during the day
- Number of cases in which performance found satisfactory
- Number of cases in which performance was not up to the mark
- Action taken or proposed to be taken
- Complaints received and attended

Inspection of cost recovery services:

- For example hotels, hospitals, commercial streets and offices
- Number of cost recovery sites under the inspector's charge
- Number of sites inspected
- Deficiencies noticed
- Complaints received and attended
- Action taken or proposed to be taken

Inspection of bulk community waste storage sites:

- Number of sites in the area under the inspector's charge
- Number of sites inspected
- Number of sites found well-maintained
- Number of sites found ill-maintained or needing repair or replacement and action taken

- Number of unauthorised waste disposal sites or sites identified during field visits and action taken

Inspection of silt removal sites and building waste disposal sites:

- Number of silt removal sites inspected
- Number of sites found satisfactory
- Number of sites in which silt was found lying outside manhole or surface drain
- Number of construction sites or construction waste disposal sites visited
- Number of sites in which construction waste was found disposed of in an unauthorised manner and action taken

Transportation of waste:

- Number and type of vehicles and equipment required to report for duty
- Number and type of vehicles or equipment that reported for duty
- Breakdowns reported during the day and action taken
- Number of trips made by each vehicle to the disposal site
- Number of bins cleared during the day
- Number and locations of bins left uncleared
- Arrangements made or proposed to clear backlog

Quantity of waste transported:

- Number of vehicles deployed during the day
- Number of trips made
- Quantity of waste transported
- Number of vehicles that did not make adequate trips
- Number of vehicles that carried less garbage
- Action taken or proposed against defaulters

Inspection of processing sites:

- Whether the plant was functional during the week
- Whether the site received the garbage as prescribed regularly
- Whether the site is properly maintained and waste stacked properly
- Quantity of bio-organic fertilizers or desired material produced
- Quantity of products sold during the week
- Quantity of end products in stock
- Any irregularity noticed
- Action taken

Inspection of waste disposal site:

- Name of site inspected

- Whether all staff was present on duty during the week
- Whether required machinery was available on the site all days
- Whether approach and internal roads are properly made
- Whether weight bridge is functional and properly used
- Quantity of waste received at the site per day during the week
- Whether the entire waste was spread, compacted and covered on the same day
- Whether communication facilities remained functional during the week
- Whether shelter and drinking water facility are adequate
- Deficiencies noticed
- Remedial action taken or proposed

Record of trips made by transport vehicle at processing and disposal sites:

- Serial number
- Date
- Vehicle number
- Name of driver
- Arrival time of vehicle
- Trips made including this trip
- Waste sources and route number
- Weight of waste in Metric tones
- Deficiencies noticed
- Action taken

Each vehicle should maintain a logbook, showing information on its movements and performances:

VEHICLE LOG BOOK	
Department:	Date
Vehicle Number:	Shift
Driver's Name:	
Departure from workshop	
Return to workshop	
Fuel taken	litres.
Kilometre reading at start of work	km.
Kilometre reading at the end of work	km.
Total mileage/ kilometre	km.
Details of trips made and locations covered	
Inspected at point number _____ by _____ at _____ am/pm	
Weight recorded at Weigh Bridge	
Weigh bridge	
Driver's Signature	
User Dept.'s Signature	
Operator's Signature	

Workshop performance:

- Number and percentage of vehicles on road
- Number and type of vehicles under repair at corporation's or private workshop
- Nature of breakdown
- Duration of breakdown: less than 1 week, 1–2 weeks, 2–4 weeks or longer than 1 month
- Reasons for delay in repairs
- Expected date of vehicle to be back on road
- Number and type of vehicles and equipment required to be given to the Solid Waste Management Department by workshop or through contractor
- Number and type of vehicles and equipment actually given
- Shortfall (if any)
- Reasons
- Alternate arrangements made

Inspection of workshop stores:

- Whether list of fast moving items is maintained
- Whether list of critical items is maintained
- Whether minimum level of stock is maintained
- Items found to be out-of-stock
- Items found to be overstocked
- Deficiencies or irregularities noticed
- Action taken

To keep track of the availability and replacement of spares, computerisation of daily inventories with in-and-out information, the stock balance and economic order quantities would be very useful.

Monitoring of Complaints

All complaints regarding Solid Waste Management Services should be registered at the relevant Ward Office and monitored by the Ward Officer on a day-to-day basis. The Ward Officer should give a specific time limit to the Supervisory Staff of the Sanitation Department to dispose of the complaints and to report the compliance. An important part of the weekly review made by Senior Officers should concern the number and type of complaints and timely corrective action taken per complaint.

Cost recoveries or penalties:

- Monthly ward-wise cost recoveries for a variety of services rendered
- Monthly ward-wise penalties or levy of administrative charges from offenders

Legal matters:

- Monthly number of cases filed in the courts for violation of sanitation laws

Recovery of additional Cleaning Charges		
Name of ward		
Areas visited		
Additional cleaning charges recovered:	Number	Amount
From households		
From shops		
From offices		
From other establishment		
From road side vendors, eating joints		
	<hr/>	
TOTAL		

Monitoring public Response – Monthly Report

To monitor the Solid Waste Management Services effectively, all information should be carefully analysed and corrective measures should be taken promptly. Each Supervisory Staff member should have route maps and duty charts to check whether the work on the site is done according to schedule and whether vehicles and manpower are giving their optimum output. Wireless pagers or other communication networks are essential for effective communication and to monitor the services.

Public participation:

- Total number of sweepers allotted for door-to-door waste collection work in each ward
- Number of sweepers getting good response from citizens regarding doorstep collection
- Number of sweepers getting no response from the public percentage of public participation
- Improvement in this area over the last month

The following formats have been designed for municipal bodies, suggested by the committee that is appointed by the Honourable Supreme Court:

1. *Status Report on Solid Waste Transportation (Summarised - Daily Statement) (MIS - V/1)*

A format designed to provide information on the vehicle utilisation, efficiency and the total amount of garbage transported to the disposal site.

2. Status Report on Solid Waste Transportation - Vehicle-wise (Daily Report) (MIS - V/2)

This format is sequel to the earlier one and will provide information on the vehicle-wise garbage lifting performance. It will provide information on the number of garbage points attended and not attended by the vehicle, and the alternative arrangements made in this respect.

3. Solid Waste Management (Staff Position) Status Report (Daily Report) (MIS - V/3)

This format is drafted to provide staff-wise performance information, data on absenteeism, the areas not attended due to staff problems and alternative arrangements made.

4. Collection Point-wise Daily Status Report (MIS - V/4)

This format will provide information on the formal and informal collection point-wise garbage lifting and can be used to crosscheck MIS - V/1 & 2.

5. Status Report on Solid Waste related Project Development Activities (MIS - V/5)

This format is drafted to monitor the waste processing plan and landfill site operations. Until today attention was only given to solid waste collection and transportation, but now scientific solid waste disposal has become the most important aspect.

6. Overall Efficiency Report (Monthly) (MIS - V/6)

This format provides various checklist points to measure the overall performance or efficiency of the Solid Waste Management Service.

7. Status Report on Maintenance of Public Toilets (MIS - V/7)

This format deals with the maintenance and management of public toilets, one of the most neglected urban services in our municipal bodies.

VI. Water Supply Department - Operations & Maintenance – MIS Formats VI/1 to VI/9

Water is an urban service and urban life cannot do without. In Sanskrit water is rightly called '*Jeevan*', which means 'life'. In budgetary allocations of municipal bodies the Water Supply Service receives the highest allocation. The MIS formats described below are to be prepared by the Water Supply Department (O&M) and to be submitted to the Municipal Commissioner, giving one copy to the Central MIS section for their database.

1. Water Supply System Status Report (monthly)(MIS - VI/1)

The operation of the Water Supply System has become highly electrical-mechanical oriented. Its efficiency depends on the functioning of electric-mechanical pumps and installations. This format is drafted to document the average working hours against the standard working hours.

2. Status Report on Water Drawl and Supply (MIS - VI/2)

MIS - VI/2 deals with all types of water sources, their installed capacity and the actual utilisation of the capacity, i.e. the actual amount of water drawn from the sources.

3. Status Report on Water Drawl and Supply (detailed distribution point wise) (MIS - VI/3)

MIS - VI/3 concerns the water supply through various distribution points and should be prepared on a monthly basis. It helps to monitor the efficiency of each water distribution point and network.

4. Status Report on Water Loss (MIS - VI/4)

A major problem associated with the water supply system is water loss, which is up to 35 percent in some places. Municipal bodies need to keep this loss at a minimum to avoid excessive water drawing from its sources and to keep the costs of the water supply service down. A municipal body needs to have good water drawl and supply accounting. MIS - VI/4 facilitates water accounting and water loss monitoring.

5. Status Report on Water Drawl and Supply from Tube Wells (MIS - VI/5)

Most cities only have a handful of big water sources, which is easy to monitor. Some cities, however, totally depend on a large number of tube wells for their water supply. In that case the water management does not only become difficult but also nerve breaking. MIS - VI/5 is drawn to take this peculiarity into account. It will be useful to know the tube well-wise operational position on a day-to-day basis.

6. Electricity Consumption Status Report (MIS - VI/6)

The Water Supply Services operations have become highly electricity consumption-oriented. Electricity is a very costly commodity and as a result the electricity costs constitute more than 50 percent of the operative costs. Therefore, there is an urgent need of an Energy Audit to control the costs. MIS - VI/6 is designed to monitor the water source-wise electricity consumption by comparing it with the standard and average consumption value.

7. Illegal Connections Status Report (MIS - VI/7)

Illegal water connections are a problem the Water Supply Service has to deal with. This means that connections are taken without permission and without payment of charges to the municipal body. This issue should be viewed seriously and there should be a regular programme of inspection and detection. MIS - VI/7 format is designed to monitor operations to detect, regulate and penalise illegal water connections.

8. Status Report on New Water Connection (MIS - VI/8)

The development of cities is a continuous process and as new buildings arise, new water connections are needed monthly from the Water Supply Department. Getting a

water connection from a municipal body can be a long drawn affair for a common citizen, which will lead to resentment. Municipal bodies need to monitor the task of giving new connections and MIS - VI/8 is aimed to serve this. Municipal bodies should update information on the total number of category-wise water connections.

9. Status Report on Water Contamination (daily-month wise) (MIS - VI/9)

Water contamination is a problem that is associated with the Water Supply Service and public health. If not taken care of at the right time, it can lead to serious public health situations and epidemics like jaundice, typhoid or gastro-enteritis. Accordingly water contamination complaints and incidences should be monitored immediately and the way the contamination is being solved should be supervised closely. MIS - VI/9 is an attempt to facilitate this objective and to maintain a database. A well-maintained database about contamination problems helps to decide the area and the period of the year prone to contamination allowing remedial actions to be taken in time.

VII. Sewerage Service Department - Operations & Maintenance (O& M) - MIS Formats VII/1 to VII/7

Another basic urban service that is directly linked with the Water Supply Department is the Sewerage Service Department. This service is becoming evermore technical, voluminous and capital intensive, requiring an enormous budgetary allocation. Inadequate functioning or breakdowns can become a nightmare for the residents of a city. The Executive Sewerage Engineer or the engineer who is in charge of the service should prepare the MIS format. It should be submitted to the Municipal Commissioner, handing one copy to the Central MIS Section for information documentation and a database creation. The MIS formats designed for this service are as follows:

1. Sewerage System Status Report (MIS - VII/1)

MIS - VII/1 is designed to give an overall picture and comparative information on the actual performance against the standard and average performance. Clearing sewer lines and manholes on a regular basis are a must for the system to work efficiently. Accordingly, information on cleaning operations needs to be documented. Municipal bodies may not have this format providing for sewerage treatment plants yet but they will have to construct them in the near future.

2. Status Report on Sewerage Generated and Treated (MIS - VII/2)

MIS - VII/2 is a sequel to the first one and will cover information on sewerage pumping and the treatment capacity utilisation against the total sewage generation and the installed capacity.

3. Sewerage System - Electricity Efficiency Report (MIS - VII/3)

The Sewerage Service also intensively consumes electricity and thus requires an Electricity Efficiency Report to control the costs. MIS - VII/3 is designed to make such monitoring possible as well as the monitoring of repairing costs and the ageing of machinery.

4. Illegal Sewerage Connection Report (MIS - VII/4)

The Sewerage Service Department also suffers from illegal connections. Therefore, a municipal body needs to have a system to inspect properties to detect illegal sewerage connections. There should also be a prescribed procedure to regularise such illegal connections. If they cannot be regularised on technical or other legal grounds, they should be removed. This required to be done on a regular basis. MIS - VII/4 facilitates a management a suitable reporting or information format for such monitoring.

5. Industrial Sewerage Connections Monitoring Report (MIS - VII/5)

Certain industries release untreated sewerage connections, damaging sewer lines. Municipal bodies should monitor such industrial sewerage connections on a regular basis by taking samples at appropriate time intervals. MIS - VII/5 is structured to gain such information, information on their affluent quality and actions taken. If there are few industries, the individual industry-wise statement can be prepared. If there are many, a summarised statement should be prepared, reflecting only the defaulter industry's name.

6. New Sewerage Connection Report (MIS - VII/6)

Cumbersome, bureaucratic procedures often prompt people to make illegal connections. New sewerage connections are always in demand. The procedure to give new connections should be quick and consumer-friendly and must be monitored regularly. MIS - VII/6 is structured to facilitate such monitoring. The database on the total sewerage connections given in the city has to be maintained and updated regularly.

7. Status Report on Waste Water Treatment (MIS - VIII/7)

Even though Waste Water Treatment is the final and most important aspect of any sewerage system, it has not received adequate attention in the past. Even today most of the municipal bodies do not have treatment facilities, but the increasing environmental awareness makes municipal bodies install waste waster treatment plants. The format is designed to monitor their performance.

VIII. Public Health Department - MIS Formats VIII/1 to VIII/22

This department is involved with the maintenance of the general public health and has to deal with for example malaria, the control of infectious diseases, family planning, food adulteration, vaccination, ante- and post-natal care, Integrated Child Development Schemes (ICDS) and Urban Community Development (UCD) projects. There is no uniformity, every state is different: municipal bodies can have all the above

functions, some or none of them. All formats concerning public health activities or functions are provided in this manual, whereas some municipal bodies need them today, others in the future. The applicable formats are:

1. Status Report on Issue of Health Licenses for Hotels (MIS - VIII/1)

One very important function of the Public Health Department is to issue health licenses to, amongst others, hotels and restaurants. This stipulation is to ensure hygienic conditions at places where food is cooked and served. MIS - VIII/1 is designed for this objective.

2. Status Report on Inspection of Food-Joints (MIS - VIII/2)

Besides the above formal food places, there are numerous informal food joints or eating-places. Such places can be dangerous for the public health, but they cannot be totally eradicated or wiped out. Municipal bodies can inspect the hygienic conditions of the food items sold. They should educate the owner and the society at large. MIS - VIII/2 is designed to monitor the work of checking informal food joints.

3. Workings of Municipal Hospitals (MIS – VIII/3)

Some large municipal corporations run hospitals and they need intense monitoring as hospitals offer a very sensitive service. MIS – VIII/3 is designed to monitor the performance of hospitals run by municipal bodies.

4. Working of Municipal Clinics/Dispensaries Report (MIS - VIII/4)

Sometimes a municipal body runs clinics and dispensaries. In that case the municipal management needs to know the number of patients treated, their socio-economic and disease profile and the kind of patients the municipal body was not able to treat. This information can help a municipal body to monitor or take decisions regarding the quantum and efficiency of work. It can chart out preventive steps to reduce the occurrence of common diseases. It also helps to decide whether more facilities or staffs are needed in order to treat more patients, so that they will not be required to be sent to other places. MIS – VIII/4 is drafted to serve this kind of decision-making.

5. Report on Working of Medical Stores (MIS - VIII/5)

A municipal body that runs clinics and dispensaries requires a medical store. The information needed to take appropriate decisions regarding the operation of the store and the stock position would be:

- Opening and closing stocks
- Actual consumption against standard consumption
- New stock or purchase ordering point
- Deviations and reasons for the same

MIS - VIII/5 is designed to provide the management all this information on a regular basis.

6. Birth and Death Statistics (MIS - VIII/6)

Birth and death statistics constitute vital and legal information. This data is important for a future planning, to know population growth trends and the causes of death profiles. The online computerisation of this function and database provides further analytical data like the infant mortality rate, birth rate, death rate and delivery death rate. MIS – VIII/6 is designed to provide all this information.

7. Status Report on Malaria Diseases Surveillance (MIS - VIII/7)

Malaria is a rampant and destructive disease in urban areas. The lack of adequate sanitation and sewerage facilities cause this mosquito menace. There is a national Malaria Control Programme and each municipality has a centre or section that deals with this work. As part of this programme blood samples are taken and analysed, and treatment is prescribed. MIS - VIII/6 will be useful to document and monitor this work.

8. Status Report on Mosquito Mass (MIS – VIII/8)

The effective control of malaria requires surveillance of the total malaria mass around the year. This format is designed to document such a database.

9. Status Report on Mosquito Larvae Mass (MIS – VIII/9)

To control malaria the breeding places of malaria larvae need to be found for eradication. MIS – VIII/9 will help to document records about the various mosquito breeding places and efforts to eradicate them.

10. Status Report on Dengue Patients in the City (MIS – VIII/10)

Dengue is, like malaria, a very destructive disease in urban areas. It also breaks out because of inadequate sanitation and sewerage facilities. MIS – VIII/8 & 9 are also useful for the surveillance of dengue. MIS - VIII/10 is designed to document information about dengue patients.

11. Status Report of infectious Diseases (MIS - VIII/11)

Due to a high population density, infectious diseases can acquire an alarming proportion in urban areas. It is necessary to have a continuous vigil on cases of infectious diseases. MIS - VIII/11 is designed to serve this purpose.

12. Status Report on National Tuberculosis Contract Programme (MIS - VIII/12)

Tuberculosis is not completely eradicated, on the contrary. Therefore the Central Government has initiated the National Tuberculosis Programme and provides grants to local bodies. MIS - VIII/12 covers the information and should be submitted to the Central Government.

13. Status Report on HIV-positive/AIDS-affected Patients in the City (MIS – VIII/13)

HIV and AIDS are strongly present in India and even more in urban areas. MIS - VIII/13 is a basic format documenting information on the affected patients.

14. Public Analysts Report (MIS - VIII/14)

Most cities or clusters of cities have a public laboratory. It collects samples of food and other consumable items and monitors its quality. MIS - VIII/14 is designed to document and report the analysis done by the Public Health Laboratory.

15. Status Report on Food Adulteration Control Efforts (MIS - VIII/15)

There is an act that prevents food adulteration and provides penalties against the responsible persons. This format provides a performance evaluation on food inspectors and the actions taken against food adulteration cases.

16. Status Report of Family Planning, Vaccinations, Ante- Natal & Post-Natal Care (MIS – VIII/16)

These are three important national health programmes and they deserve good monitoring. MIS - VIII/16 is designed to document performance information on these health programmes.

17. Workings of Anganwadies Report (Summarised) (MIS - VIII/17)

In order to take care of expecting and nursing mothers, and children below six years, the Government of India has undertaken an Integrated Child Development Scheme (ICDS). In many places municipal bodies have the responsibility of this programme in an urban area. Both formats are for monitoring work of the ICDS. MIS - VIII/17 is to give a macro-picture of all *anganwadi* centres. It provides the basic statistics of the entire ICDS run by a municipal body.

18. Workings of Anganwadies Report (Detailed) (MIS - VIII/18)

MIS - VIII/18 is a sequel to the former format. Essentially it provides information on the total population served by the *Anganwadi* Centres and the actual beneficiaries of ICDS out of the population covered.

19. Status Report on Supplementary Nutrition Programme (MIS - VIII/19)

An important programme run by the *Anganwadies* is the Supplementary Nutrition Programme (SNP), under which expecting and nursing mothers and children under six years are provided nutrition supplements to save them from malnutrition. MIS - VIII/19 is drafted to monitor the workings of the SNP.

20. Status Report on Immunisation, Health Check-up and Referral Activity of all Anganwadies together (MIS - VIII/20)

This is another important activity of the *Anganwadies*, because children and mothers are immunised and provided with a continuous health check-up. If required they are referred to a hospital for further treatment. MIS – VIII/20 is designed to monitor this activity.

21. Status Report on Ambulance Service (MIS - VIII/21)

At many places municipal bodies provide an Ambulance Service. MIS - VIII/22 is designed to monitor the operations of this service, which is essential for the public. The reputation of a municipal body is affected by the functioning of this service and thus requires good management and regular monitoring, just like the Fire Brigade Department. The format will provide all basic information like calls received, the fuel consumption, the off-the-road ratio and the costs per vehicle.

22. Status Report on Management of Stray Animals (MIS – VIII/22)

Stray animals are a big menace in urban areas. Municipal Acts state that the management of stray animals is an obligatory or a statutory duty. MIS – VIII/22 is designed to document the efforts of a municipal body.

IX. Road Department - MIS Formats IX/1 to IX/3

Another basic urban service is related to roads, bridges, footpaths etc. Like the Streetlight and Solid Waste Management, this service has a tremendous visible impact. Designing MIS formats to monitor the operations of the Road Service is not very difficult, but still some formats have been designed.

1. Status Report on Maintenance & Development of Roads and Footpaths (MIS - IX/1)

This format contains various categories of road maintenance and development works. The information is designed to cover data in both physical and financial forms, and the monthly and annually expenditures till date. It will also help to create a database and to update on a regular basis.

2. Status Report on Roads, Footpaths, Bridges, Culverts etc. - Maintenance & Development (MIS - IX/2)

This format is sequel to MIS - IX/1 and is to document information on the various types of maintenance works carried out on roads, bridges, footpaths etc.

3. Status Report on Hot-Mix Plant Operation (MIS - IX/3)

In some cases a municipal body owns a hot-mix plant. Accordingly, MIS - IX/3 is drafted to provide vital information on for example the production, consumption, costs and utilisation efficiency percentage. This information should be prepared on a monthly and cumulative basis and submitted.

X. Storm Water Drainage & Lakes Department – MIS Format X/1

1. Status Report on Storm Water Drains and Lakes (MIS - X/1)

This service is usually part of the Public Works or Road Department. It is becoming evermore important in urban areas as cities keep on developing. Roads, footpaths and properties are covering more and more areas, resulting in a reduction of permeable areas and water logging in the rainy season. This explains the need for a storm water

drainage network. Only recently this service started to get attention. MIS - X/1 is useful to monitor the works relating to this service.

XI. Public Building & Public Housing - MIS Format XI/1

1. Status Report on Public Building and Public Housing Activity (MIS Format XI/1)

A municipal body possesses several buildings to carry out its operations. Municipal bodies often construct houses for people who live below the poverty line or who are economically weak. These buildings require regular maintenance and this activity needs to be monitored. MIS - XI/1 is expected to serve this purpose.

XII. Garden, Zoo, recreational Infrastructure etc. – MIS Format XII/1

Status Report on Gardens, Tree Planting and Cutting, Zoo and Recreational Infrastructure (MIS - XII/1)

Gardens, the zoo and other types of recreational infrastructures form an essential part of urban life. Municipal bodies provide them, even though they are discretionary activities. As they involve a maximum public interface they need to be monitored and maintained properly. MIS - XII/1 is drawn keeping in view these considerations.

XIII. Primary Education - MIS Formats VIII/1 to VIII/3

Primary education is a state subject. Nevertheless, in many states municipal bodies are bestowed with the responsibility of primary education. They receive grants for a certain portion of the total expenditure, but they are expected to contribute the rest of the amount from their municipal funds. This service is very important and thus needs to be monitored carefully. There are several formats through which the District Education Officer of the State Government monitors this service for the Government. The following formats are for the Municipal Commissioner who needs to know and monitor this service selectively and not exclusively.

1. Status Report on Workings of Municipal Schools (MIS - XIII/1)

This format essentially covers the basic statistics regarding the primary education service run by a municipal body. It provides information like the number of schools, students and teachers.

2. Status Report on Students studying at Municipal Schools (MIS - XIII/2)

This format provides detailed information on the students studying at municipal schools, like total numbers, new admissions, dropouts and the students who passed or did not pass the examination.

3. Status Report on Infrastructure & Educational Facilities at Municipal Schools (MIS - XIII/3)

This format is designed to monitor the availability of infrastructures and education facilities at municipal schools. This information will be useful to decide the allocation of budgeting resources.

XIV. Social Welfare, Slums Improvement etc. - MIS Formats XIV/1 to XIV/4

1. Demographic Status Report on Slums in the City (MIS – XIV/1)

In order to plan and undertake any slum upgradation work, the basic information required is the demographic profile of that slum area. MIS - XIV/1 will help a municipal body to document this profile.

2. Incomes and Employment Status Report on Slums in the City (MIS - XIV/2)

The income and employment profile of people living in slums is very important during the planning phase of the upgradation. The financial profile of slum dwellers plays an important role regarding the decision on the level of infrastructure and the possible percentage of cost recovery.

3. Status Report on Slums in the City (MIS - XIV/3)

The slum upgradation strongly depends on the status of the land on which the slum is situated, and whether it has saturated or whether it is still growing. MIS - XIV/3 tries to capture this critical information.

4. Status Report on Infrastructure Facilities in Slums (MIS - XIV/4)

Any slum upgradation project needs information on the availability and quality of core urban services and the infrastructure in the slums. This information needs to be updated continuously and collected in MIS - XIV/4.

XV. Projects/Development Works Monitoring - MIS Formats XV/1 to XV/7

All formats in this section belong to their respective departments, but they have been clubbed because monitoring development works requires a holistic and overall approach. The Central MIS Department or City Engineer's Office should prepare all these formats for submission to the Municipal Commissioner and other HOD's. Each department will be required to send the relevant information to the Central MIS Office or City Engineer's Office within a predetermined timeframe. Alternatively a municipal body can use the same formats for each service. Each Service Head is responsible to prepare and submit the formats to the Municipal Commissioner. These formats are as follows:

1. Progress Report on Development Works (MIS - XV/1)

This format will provide a quick view of the physical and financial progress regarding the development works identified. In case of Development Works Reports, all works

should be taken into consideration, whether they are identified during the last year or this year, under loan funds, revenue funds or grant funds. The format aims to provide department wise information on amongst others the total numbers of works that are identified, completed and budgeted and the actual expenditure.

2. Progress Report on Development Works (Grand Summary) (MIS - XV/2)

This format has a matrix structure: it involves both the departments and the work completion stage. It provides information on all identified developmental works and the stage-wise pendency or progress of development works. It will help the management to take the appropriate steps to remove bottlenecks that have been observed at a particular work completion stage or the works of a particular department.

3. Capital (Development) Works Progress Report (individual Work-wise) (MIS - XV/3)

This is a detailed format. It will provide individual work-wise information, stage-wise information on the work completion and department-wise information. The three-dimensional information will be useful for the middle-level management in order to monitor each individual work and to take timely action to avoid delays.

4. Progress Report on Development Works (department, stage and budget-wise) (MIS - XV/4)

This format is especially developed for the individual Departmental Head. It will provide an overall view on all development works of the department, their work completion stage and the budget funds to which these works belong. It is to be filled by the department itself and should be submitted to the MIS Department or City Engineer's Office to update a database.

5. Progress Report on Developmental Works (Department-wise Summary) (MIS - XV/5)

This format is similar to MIS – XV/4 and shows the progress of the development works as per the budget allocations or fund-wise. It will be useful to monitor the budget expenditure.

6. Status Report on Delayed Development Works (MIS - XV/6)

This format regards the development works, which were delayed for some reason. It will help the critical management of these delayed works. It should be prepared by each department and consolidated by the Central MIS Department.

7. Status Report on Development Works with more than 10 percent Cost Variations (MIS - XV/7)

Again this format is for the critical management of developmental works. It is designed to provide information and reasons on works with a cost variance of more than 10 percent between tendered and actual costs. It will help the top management to know why and in which component the costs got escalated and whether the cost escalation

was justified or not. This monitoring will also make all the people down the line cost-conscious. Each department should send such information to the Central MIS Section and they should prepare a consolidated statement on basis of the information received.

XVI. Public/City Transport Department/Undertaking - MIS Formats XVI/1 to XVI/3

1. Comparative Information on Revenue earned from Sale of Tickets and Passes (MIS - XVI/1)

This is a simple MIS format and is designed to indicate the income from the sale of tickets and passes over a given period of time, month-wise and year-wise.

2. Performance Measurement of City Transport Service on basis of various Indicators (summarised) (MIS - XVI/2)

Public transport, being one of the most important urban services, needs to be run efficiently. Therefore it is essential to monitor its performance continuously. MIS - XVI/2 provides a summarised picture of the city transport service.

3. Performance Measurement of City Transport on basis of various Indicators (detailed) (MIS - XVI/3)

This format is sequel to earlier one. It provides a detailed picture of the performance of the city transport service against various benchmarks.

XVII. Miscellaneous/other Departments - MIS Formats XVII/1 to XVII/5

As the following group of MIS formats is generic in nature, all departments should use them.

1. Stock Position of Important Raw Materials Report (MIS - XVII/1)

A municipal body may have to take more than one store into consideration. These stores can have a specialised nature, like engineering (water supply and sewerage) stores, medical stores and streetlight stores. MIS - XVII/1 is common for all stores. Medical stores have been discussed earlier, but for other stores MIS - XVII/1 should be used. The Departmental Head should get this statement prepared from his Stores Officer and a copy of the same should be submitted to the Municipal Commissioner and the Central MIS Section for a consolidated statement and database.

2. Complaints Redressal Report (MIS - XVII/2)

Again this is a generic or common issue related to all departments. Accordingly, MIS - XVII/2 should be filled in by each department and consolidated by the MIS Section for the top-level management. The efficiency of the administration or any system is assessed by the average time taken for the complaint's redressal. Prompt redressal of complaints creates a positive image for the municipal body and goodwill.

3. Vehicle Efficiency Report (MIS - XVII/3)

This format is very important with regard to cost control. A municipal body possesses a number of vehicles. They can be grouped under a common Vehicle Pool Department or sometimes each department manages its own vehicles. Monitoring fuel efficiency and the working efficiency of each vehicle has become very important. For example, it can be found that replacing a vehicle with a low fuel and working efficiency by a new one can be more economical than continuing with the age-old one. Municipal bodies ideally should computerise operations of vehicle pool and workshops using a tailor-made software programme. This would allow them to know the pool workers per vehicle, the labour and cumulative costs per vehicle and the total number of kilometres run by the vehicle till date. As long as there is no computerisation, MIS - XVII/3 is recommended. This format essentially contains information regarding vehicle-wise fuel efficiency, the off-the-road status and the general expenditure on each vehicle. The person who is in charge of vehicle pool cum workshops should prepare it.

4. Clearance of Letters, Notices, Applications etc. by various Departments (MIS – XVII/4 & 5)

Every municipal body receives various types of correspondence from people and institutions. The efficiency of a municipal body gets reflected in the responsiveness and quickness to reply to letters, notices, applications etc. received. MIS - XVII 4 & 5 allow municipal bodies to monitor the clearance of all types of correspondence.

Way Forward

This chapter provides model information formats that cover basic information on each function of a municipal body. As hundreds of formats can be designed, the ones provided are not exclusive but illustrative. The formats are not a MIS. Using these formats or using them as the basis foundation, municipal bodies can set up their own customised MIS or introduce a MIS on a manual basis. As explained in chapter 4, a municipal body has to build an integrated information system using different system development methods and an implementation plan. They will also have to develop an appropriate organisation and managing structure to operate and sustain the MIS.

In the present context a MIS is a computerised integrated information system that receives inputs from multiple sources and processes, and that analyses and serves multiple objects, events and end-users. In order to develop such a comprehensive MIS, any system development effort involves five basic steps: feasibility and planning, system analysis, tailor-made system design, implementation and maintenance. MIS development in a municipal body implies that formats provide a generic municipal system analysis, which forms the base for system design and generic end products any municipal MIS will be required to produce.

This manual provides guidelines on how to develop, implement, manage, maintain and upgrade a MIS in a municipal body. If the manual and its formats fulfil this role, it has achieved its purpose.

Chapter 6

Implementing MIS in Municipal Bodies

INDEX

<i>Introduction</i> _____	140
<i>Prerequisites of MIS Implementation</i> _____	140
<i>Characteristics of effective MIS</i> _____	141
<i>Prerequisites of effective MIS</i> _____	141
The four main requirements for an effective MIS are: _____	141
1. Database _____	141
2. Staff _____	141
3. Support of Top Management _____	141
4. Control and Maintenance _____	141
<i>Desirable Characteristics of MIS</i> _____	142
<i>Implementing MIS in a Municipal Body</i> _____	142
1. Survey: Information Needs of Decision-Makers _____	143
2. Opinion Building _____	143
3. Survey: Nature & Type of generated and required Information _____	143
4. Feasibility Study _____	143
5. Implementation Team _____	143
6. Implementation Plan _____	144
7. Professional Support _____	144
8. Objects & Events _____	144
9. System Design Method _____	144
10. System Analysis _____	144
11. Design _____	145
12. Inherent Flexibility _____	145
13. Effects of Introduction or Change _____	145
14. Participative Design and Implementation _____	145
15. User Education & Capacity Building _____	146
16. Encouragement _____	146
17. Commercial Software _____	146
18. Final Testing _____	146
19. Post-Change Evaluation _____	146
<i>Summary</i> _____	147

6

Implementing MIS in Municipal Bodies

Introduction

Municipal bodies do not have MIS per se. Most of them have an unregulated flow of incoherent information, which usually is not analysed and documented for posterity and - more important - which is not used for decision-making in a formal manner. Decision-making in municipal bodies is based on experience or a reaction to a situation using informal information gathered by the decision-maker.

The ever-expanding and changing role of municipal governments requires that their MIS are diverse and multi-focused, but holistic and dynamic at the same time. The role of other organisations is not as diverse and still interconnected and following the social forces. Urban society is always changing and municipal bodies have to deal with this flux in a multi-faceted way. Because of these characteristics and complexities there is no example of a well-structured MIS that covers all roles of a municipal body holistically.

Only a handful of municipal bodies like Vadodara Municipal Corporation and Navi Mumbai Municipal Corporation have made an effort to design and implement MIS. As observed, even in those cases the efforts are restricted to the development of MIS for only one or two functions. This chapter discusses various aspects that are important to implement a MIS in a municipal body.

Prerequisites of MIS Implementation

Some factors enhance the chance to implement a MIS successfully:

- Involving top management in the information management and computerisation effort, in defining the purpose and goals of MIS with or without computerisation within the organisation.
- Selecting an Information Technology Manager with political skills to involve Municipal Executives or Officers in choosing application areas, identifying information needs and designing reports.
- Computer and MIS staff with interdisciplinary skills in computers, management and operations research.
- Appropriate MIS system designing and creating a suitable structure to manage MIS as discussed in chapter 4.
- Balance expenditure on hardware and software.

Characteristics of effective MIS

Before discussing the implementation plan it is appropriate to take note of some facts regarding the final product. An effective MIS should have the following characteristics:

- It should be management-oriented: efforts to develop the MIS should start from an appraisal of the management needs and the overall objective of the entity.
- It should be management-directed: the management should get involved more than once. They should actively direct the system development effort on a continuous basis and give sufficient time for its review to ensure that the implemented system meets the specifications of the designed system.
- All functional and operational information sub-systems in the MIS should be integrated with each other.
- Common input, processing, output procedures and media should be used as far as possible to avoid duplication and simplify operations.
- The MIS should be established in an entity over a long period of time in which the system is designed, implemented, tested and improved to obtain the desired results. Therefore, the MIS designer should plan accordingly, keeping in view the future objectives and requirements of the entity.

Prerequisites of effective MIS

The four main requirements for an effective MIS are:

1. Database

The database should be maintained in such a way it satisfies the needs of all users, but access should be restricted and controlled by a separate authority established for this purpose.

2. Staff

The staff employed should be knowledgeable and properly trained to analyse the data and generate effective reports.

3. Support of Top Management

Unless the top management supports its subordinates, the lower-level managers become lethargic and usually do not perform up to their capacity.

4. Control and Maintenance

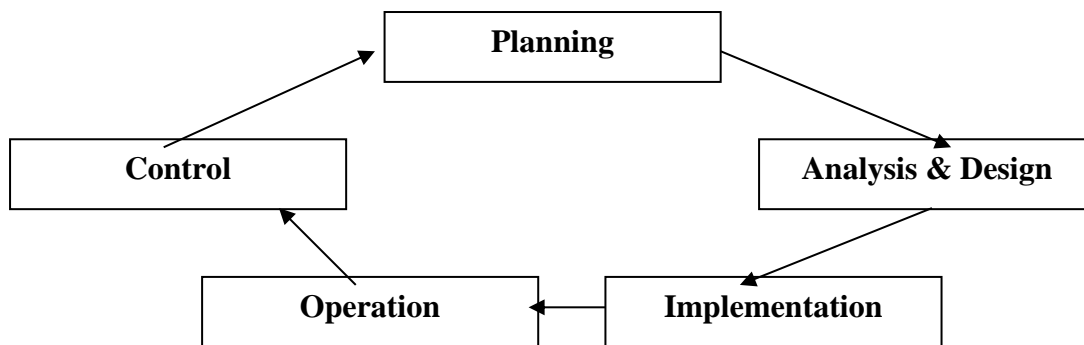
The database and system should be updated and checked regularly, considering the changes of the entity's needs and the external environment, to ensure that the system is working as per design and generating the desired reports.

Desirable Characteristics of MIS

As mentioned in chapter 2, the desired characteristics of information are accuracy, timeliness, objectivity, relevance and conciseness. Some of these characteristics are also desirable for a good, effective and efficient MIS.

Developing a MIS is a never-ending process, as organisations strive to take advantage of new technologies and methodologies. The evolutionary process that is followed to achieve a MIS is called the MIS life cycle. This cycle consists of phases in a sequence of planning, analysis and design, implementation, operation and control. The manager is ultimately responsible for both developing and using it. Even though information specialists recommend a particular system design, it is the manager's responsibility to approve its implementation and to make sure that the MIS caters to the leadership styles. The greater the user-involvement at all stages of the life cycle, the more superior the end result.

Figure 6.1 – MIS Life Cycle



The system should help each executive in the decision-making process with problem identification, generation and the evaluation of alternative courses of action. It should also help to acquire necessary feedback on implementing decisions and to take corrective action.

The MIS should rather develop the much needed management information than facts. It should provide relevant data in a summarised form to the higher echelon. Apart from the appropriateness of information at different levels, it is important to recognise that different types of information are required for planning, control and other managerial functions. The system should be integrated in a centralised database to cut down on redundancies, overlaps and costs.

Computerising the system might become necessarily, especially for large and complex organisations or if the existing manual-based MIS is able to provide timely information. The reports churned out of the MIS should be relevant and meaningful, and they should only be distributed to the persons who genuinely need and use them.

Implementing MIS in a Municipal Body

Any average municipal body can introduce a MIS or improve it by taking the following simple steps. The list is mere illustrative; the implementation plan depends on the earlier discussed factors.

1. Survey: Information Needs of Decision-Makers

First of all a municipal body should carry out an informal internal survey on the information requirements by interviewing its officers. This survey provides the management information on the need for a MIS, and the kind of information the officers of an Urban Local Body (ULB) need to improve their decision-making and to carry out their function.

2. Opinion Building

The survey might reveal that the need for information to improve decision-making is very low amongst officers of a municipal body. In that case the officers should receive training on the importance and application of information. Such an in-house training workshop should be conducted with the help of information and management experts. The officers will create an information need and they will be able to respond in a constructive manner to the survey. This exposure will also learn them to create an adequate opinion. All this will improve their decision-making. The opinion building exercise can be done prior to the above felt need survey. It is up to the management of the municipal body to decide when to undertake the opinion-building exercise and for whom.

3. Survey: Nature & Type of generated and required Information

The municipal body should carry out another survey on the nature and type of information it generates. The output of this survey should be compared to the former survey on information needs of decision-makers. This exercise will provide understanding on the information available but not required, and on the information that is required but currently not collected. As information management involves costs, it should be done selectively. The municipal body has to pay for generated information that is not required and accordingly efforts should be made to avoid it becomes generated, collected and stored.

4. Feasibility Study

The next step is to carry out a feasibility study. The objective is to quickly examine the problems, what the proposed MIS will be able to provide and the expected costs to introduce or upgrade a MIS. It may indicate that certain information is not covered by the computerised system and that the municipal body will have to keep a manual information system for certain areas. It can also indicate that certain information cannot be made part of the MIS and that it is better to wait for an improved technology or lower price options. Ideally the study should be written, so that it can be used to 'sell' the project to the upper-management or municipal council and as a starting point for step 5.

5. Implementation Team

Once the proposal turns out to be feasible, the municipal body should appoint a MIS implementation team and professionals to undertake the proposed MIS efforts. The team should exist of leaders, achievement-orientated officers and employees. It is found to be useful to have a special purpose implementation team, consisting of people from various sections of the organisation who work directly under one of the top-executives (i.e. a Municipal Commissioner or a Chief Officer in case of a municipal body).

6. Implementation Plan

Since implementation is a complex process and as it requires simultaneous happenings of several activities, a detailed implementation plan should be prepared. Such a plan gives the management a clear idea of what needs to be done, in what order and by whom.

7. Professional Support

Once the outcome of both surveys is known, the municipal management should hire professional support to design and create the structure to manage the MIS and they should make an action plan for implementation. As municipal bodies lack human resources and the technical capabilities to design and implement MIS in their organisations, they should ideally look for professional support. The decision on how much support they need and in which area solely depends on the management's perception of the situation.

8. Objects & Events

Defining the objects or events greatly helps to design the MIS. Objects represent entities in the real world. Each object has a name, properties (attributes or data) and a function. Events represent actions of users or certain happenings to which the MIS responds. A MIS can have multiple objects and events and there can be a hierarchical relationship between these objects and events. For example, a municipal body may decide to develop a MIS that does not only provide information to its officers but also to the people at large. Transparency and user-friendliness can be the main objects; geographical spread and multiple sources the secondary ones. The events can be a citizen touching a screen, paying taxes or an officer entering a password. Object and event orientation in system development reverses the treatment of processes and data, creates user-friendliness and gives more importance to the final results.

9. System Design Method

Next the municipal body needs to choose the right information system design method - or a combination of more than one - in consultation with the professionals' support. The different system design methods are System Development Life Cycle (SDLC), Prototyping and Rapid Application Development (RAD), Joint Application Development, Collaborative Development Technologies, Object-Oriented Development, Event Driven Development and End-User Development (see chapter 4).

10. System Analysis

The first step of the system analysis is to determine how the existing system works and where the problems are located. The technique is to break the system into pieces and to examine them. Diagrams and flow charts can be used to describe the findings of the existing system. Similarly, a visual table of contents and graphics tools can be used to communicate the findings of the analysis to its users and system developers. Eventually the municipal body or MIS implementation team will have a complete description of the MIS requirements.

11. Design

This is a major step for any system implementation plan. The objective is to describe the new MIS as a collection of modules or subsystems. The design should clearly spell out the following:

- Which part of all information gets generated daily and which part should be stored, analysed and sent to the concerned officer.
- The information flow, the starting and ending points, the formats, the frequency and the officers or employees responsible for the maintenance of the information flow.
- The documentation and retrieval of information.
- The collection of information from secondary sources (i.e. outside a municipal body) and the persons responsible for the same.
- The application of computers for the information management. The municipal body should explicitly question whether the computer technology application is a must and whether they can afford it.

12. Inherent Flexibility

The system should be inherently flexible so that users can adjust them. The items they can control differ per system. For instance, they may be allowed to change MIS report titles or even the format. At the same time these variables may be governed by legal and statutory constraints and thus not allow the user to change them. The principle is to develop a MIS that gives users as much control as possible while maintaining the integrity of the data.

13. Effects of Introduction or Change

It is fundamental for the system designing process to assess the likely effects of the proposed introduction or change of MIS. An adequate visualisation or prototyping should be done. On basis of this appropriate steps should be taken while designing the new system or change. The users need to know about these changes or likely effects as soon as possible: the more opportunities employees have to adjust to the changes, the easier it will be for them.

14. Participative Design and Implementation

To reduce resistance towards changes, it is important to involve the users in the MIS design and implementation. This will create a need-based MIS development and a sense of ownership amongst the users. Therefore, the entire exercise should be made as participative as possible. All participants should be requested and motivated to finalise their own information system which is simple, cost effective, economical, focused and drafted in such a way that most of its work is shared with the existing machinery. The implementation should not lead to the creation of an additional set-up or a monolith department. If all participants make the design and create their own system, it will not become top-heavy.

If found necessary, a municipal body may take help of outside individual professionals to co-ordinate the above process and to undertake activities to implement or to improve the MIS. Bigger municipal bodies may consider a full-fledged consultancy assignment worthwhile. Also in that case involvement of all concerned people should be ensured.

15. User Education & Capacity Building

User education and capacity building are key components of any implementation strategy. Generic education courses on the working and usefulness of MIS are effective, whereas specific training or capacity building courses on the existing MIS are even more useful.

The capacity building should utilise a variety of training methods to take care of the trainees' personalised needs. The exercises give managers the chance to answer questions or clarify doubts from the users and to minimise misinformation. Moreover, the MIS development or implementation team will receive feedback on the system and can make last-minute changes or record suggestions for future enhancements.

16. Encouragement

Only participative design and implementation, user education and capacity building are not sufficient. Users should be encouraged to change by proper incentives or motivation plans.

17. Commercial Software

As explained earlier, today a MIS inevitably involves the application of the computer technology (i.e. hardware and software). In many cases municipal bodies need to purchase commercial software for the new MIS, which involves sizeable costs and expertise. As all software comes as a package with strengths and weaknesses, before purchasing the municipal body has to carry out an in-depth cost-benefit analysis, they should utilise the services of the MIS and ask Information Technology experts for feedback.

18. Final Testing

A final testing of the new or upgraded MIS should be done before fully switching over to it. In case of computerised MIS this is a must, since a complete switchover to a new system means shutting down or dropping off the old one. Should anything go wrong with the new system, the organisation runs the risk to lose valuable information and a disruption of service operations. In case of a manual MIS this risk is minimum. As explained earlier, using a parallel run is the safest choice. Even then, however, a final testing should be done.

19. Post-Change Evaluation

The last step, a post-change evaluation of the resulting system, is an important phase in any change or reform process. As a part of this, it is also important to assess the effectiveness of the particular change or reform process. Some questions to be asked are whether the MIS development was completed in time and within the estimated costs, or whether the maintenance costs were higher than expected.

Summary

Designing a MIS for municipal bodies is complex and difficult due to various peculiar characteristics of municipal bodies. Implementing it is even more complex and difficult as it involves human resources that lack the adequate technical capability. This chapter deals with various aspects associated with the implementation of MIS in municipal bodies. The list is illustrative and as every city has a unique identity, each and every municipal body has to draw its own implementation plan to introduce or upgrade the MIS.

Bibliography

Davis G.B. & M.H. Olson, 1985, Management Information System Conceptual Foundations, Structure and Development, McGraw Hill, New York.

Gerald V. Post & L. Anderson, 2002, Management Information Systems – Solving Business Problems with Information Technology, Tata McGraw Hill, New Delhi.

Kanter J., 1972, Management Oriented MIS, Prentice Hall Incorporation: Englewood-cliffs.

Lucas Jr. H.C., 1982, Information Systems Concepts for Management, McGraw Hill, New York.

Murdick R.G. & R.E. Ross, Information Systems for Modern Management, Prentice Hall of India, New Delhi.

Senn J.A., 1985, Analysis and Design of Information Systems, McGraw Hill, New Delhi.

Zani W.S., 1973, A Blue Print for MIS, Harvard Business Review.

Tata Energy Research Institute (TERI), 2002, New Delhi, Management Information System for Performance Measurement – Kanpur: Water Supply and Sewerage.

Tata Energy Research Institute (TERI), 2002, New Delhi, Management Information System for Performance Measurement – Kanpur: Solid Waste Management.

Tata Energy Research Institute (TERI), 2002, New Delhi, Management Information System for Performance Measurement – Delhi: Water Supply and Sewerage.

Tata Energy Research Institute (TERI), 2002, New Delhi, Management Information System for Performance Measurement – Delhi: Solid Waste Management.

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEMS

Sr.
No.

Formats Index

I General Administration & Tax Collection

(A) Establishment Department

- 1 I/A/1 - Summarised Report - Total Posts sanctioned, filled and vacant
- 2 I/A/2 - Department-wise Posts sanctioned, filled and vacant
- 3 I/A/3 - Posts sanctioned, filled and vacant - Monthly departmental Report
- 4 I/A/4 - SC/ST/OBC Posts sanctioned, filled and vacant
- 5 I/A/5 - Status Report on daily-wage Employees (summarised)
- 6 I/A/6 - Status Report on daily-wage Employees (detailed)
- 7 I/A/7 - Status Report on daily-wage Employee becoming permanent
- 8 I/A/8 - Employees under disciplinary Action
- 9 I/A/9 - Terminal Benefit Payment Status
- 10 I/A/10 - Employee Absenteeism (summarised)
- 11 I/A/11 - Employee Absenteeism (detailed)
- 12 I/A/12 - Status Report on pending Government Letter received
- 13 I/A/13 - Pending Audit Objections/Paras
- 14 I/A/14 - Status Report on Training to Municipal Employees

(B) Legal Department

- 15 I/B/1 - Pending Cases filed by Municipal Body - Ageing Analysis
- 16 I/B/2 - Status Report on pending Court Cases filed against Municipal Body
- 17 I/B/3 - Annual Status Report on legal Cases filed against Municipal Body
- 18 I/B/4 - Annual Status Report on legal Cases filed by ABC Municipal Body
- 19 I/B/5 - Performance Evaluation of Lawyers hired by ABC Municipal Body

(C) Tax Assessment

- 20 I/C/1 - Status Report on Assessment of Properties (detailed)
- 21 I/C/2 - Status Report on Assessment of Properties (summarised)
- 22 I/C/3 - Status Report on Tax Litigation
- 23 I/C/4 - Status Report on Assessment Work (employee-wise)
- 24 I/C/5 - Status Report on Clearance of Tax Objections raised by People

(D) Tax Recovery

- 25 I/D/1 - Status Report on Preparation of Bills
- 26 I/D/2 - Statement on Recovery of Tax (summarised)
- 27 I/D/3 - Statement on total Tax Demand (detailed)
- 28 I/D/4 - Statement on total Tax Recovery (detailed)
- 29 I/D/5 - Statement on pending Tax Due (detailed)
- 30 I/D/6 - Statement on ward-/block-wise Tax Recovery
- 31 I/D/7 - Tax Recovery Status Report (employee-wise)
- 32 I/D/8 - Value-based Analysis of Tax Bills in Arrears

(E) Self Assessment System for Tax Payment

- 33 I/E/1 - Status Report on Self-Assessment Forms Submission
- 34 I/E/2 - Status Report on Steps taken against SAS Defaulters

(F) Octroi

- 35 I/F/1 - Octroi Revenue Status Report
- 36 I/F/2 - Statement on Octroi Revenue (detailed - check post-wise)
- 37 I/F/3 - Octroi Revenue - No-Bill Assessment Report
- 38 I/F/4 - Octroi Revenue - article-wise Analysis Report
- 39 I/F/5 - Octroi Vigilance Section Status Report
- 40 I/F/6 - Non-Tax Revenue Status Report

(G) Accounts Department

- 41 I/G/1 - Monthly Financial Position
- 42 I/G/2 - Statement showing Receipts against Budget
- 43 I/G/3 - Statement showing Expenditure against Budget
- 44 I/G/4 - Statement on fixed Deposits Investment
- 45 I/G/5 - Status Report on Cheque returned and Recovery
- 46 I/G/6 - Summarised Status Report on returned Cheques
- 47 I/G/7 - Unadjusted Advances Status Report
- 48 I/G/8 - Outstanding Loans Liability Statement
- 49 I/G/9 - Projected monthly Cash-Flow Statement

(H) Audit Department

- 50 I/H/1 - Examination of Accounts

II Land and Estate, Town Planning

- 51 II/1 - Building Permission Applications Status Report
- 52 II/2 - Building Permission Violations reporting Efficiency Status Report
- 53 II/3 - Building Completion and Violations Status Report
- 54 II/4 - Building Regulations Violation Status Report
- 55 II/5 - Encroachment Removal summarised Status Report
- 56 II/6 -Daily Report on Encroachment

III Street Light and Energy Audit

- 57 III/1 - Status Report on overall Streetlight Service
- 58 III/2 - Maintenance of Street Light Service Report
- 59 III/3 - Streetlight Service Development Status Report
- 60 III/4 - Streetlight Maintenance Efficiency Report
- 61 III/5 - Status Report on Streetlight Switching (Metering) Point Operations
- 62 III/6 - Status Report on ward-wise Streetlight Switching Points - Load and Consumption
- 63 III/7 - Format for Data Collection from Streetlight Switching Points
- 64 III/8 - Status Report on Electricity Consumption of all Departments
- 65 III/9 - Report on Variation in Contract Demand and Power Factor

IV Fire Brigade and Ambulance

- 66 IV/1 - Status Report on Fire Service
- 67 IV/2 - Status Report on Fire Service
- 68 IV/3 - Status Report on high-rise Buildings Inspection
- 69 IV/4 - Status Report on hazardous Shops and Establishments

V Solid Waste Management

- 70 V/1 - Status Report on Solid Waste Transportation (summarised)
- 71 V/2 - Status Report on Solid Waste Transportation (vehicle-wise)
- 72 V/3 - Solid Waste Management - Staff Position Status Report
- 73 V/4 - Collection point-wise daily Status Report
- 74 V/5 - Status Report on Waste Processing Plant and Landfill Site
- 75 V/6 - Overall Efficiency Report (monthly)
- 76 V/7 - Status Report on public Toilets

VI Water Supply Service

- 77 VI/1 - Status Report on Water Supply System
- 78 VI/2 - Status Report on Water Drawl (detailed)
- 79 VI/3 - Status Report on Water Supply
- 80 VI/4 - Status Report on Water Loss
- 81 VI/5 - Status Report on Water Drawl & Supply (summarised)
- 82 VI/6 - Electricity Consumption Status Report
- 83 VI/7 - Status Report on illegal Connections
- 84 VI/8 - Status Report on new Water Connection given
- 85 VI/9 - Status Report on Water Contamination (daily/monthly Report)

VII Sewerage Services Connections (summarised)

- 86 VII/1 - Status Report on Sewerage System
- 87 VII/2 - Status Report on Sewerage generated/treated
- 88 VII/3 - Status Report on Electricity Consumption
- 89 VII/4 - Illegal Sewerage Connections Status Report
- 90 VII/5 - Industrial Sewerage Connections Status Report
- 91 VII/6 - Status Report on new Sewerage Connections
- 92 VII/7 - Status Report on Waste Water Treatment

VIII Public Health

- 93 VIII/1 - Status Report on Health Licenses for Hotels
- 94 VIII/2 - Status Report on Inspection of Food Joints
- 95 VIII/3 - Working of Municipal Hospitals
- 96 VIII/4 - Working of Clinic/Dispensaries Report
- 97 VIII/5 - Medical Stores 'Operation' Report
- 98 VIII/6 - Birth and Death Statistics
- 99 VIII/7 - Status Report on Malaria Disease Cases (detailed)
- 100 VIII/8 - Status Report on Mosquito Mass
- 101 VIII/9 - Status Report on Mosquito Larvae Mass
- 102 VIII/10 - Status Report on Dengue Patients
- 103 VIII/11 - Status Report on infectious Diseases
- 104 VIII/12 - Status Report on national Tuberculosis Programme
- 105 VIII/13 - Status Report on HIV Positive and AIDS Patients
- 106 VIII/14 - Status Report on Public Analysts working
- 107 VIII/15 - Status Report on Food Adulteration working
- 108 VIII/16 - Status Report on Family Planning, Vaccination and Natal Care
- 109 VIII/17 - Status Report on Workings of *Anganwadies*
- 109 VIII/18 - Status Report on Workings of *Anganwadies*

- 110 VIII/19 - Status Report on supplementary Nutrition Programme
VIII/20 - Status Report on Immunisation, Health Check-up and referral Activity
111 of all *Anganwadies* together
112 VIII/21 - Status Report on Working of Ambulance Service
113 VIII/22 - Status Report on Management of Stray Animals

IX Roads and Bridges, Foot-Paths

- 114 IX/1 - Report on Maintenance & Development of Roads and Footpaths
115 IX/2 - Status Report on Roads, Footpaths, Bridges, Culverts etc.
116 IX/3 - Status Report on Hot-mix Plant Operations

X Storm Water Drainage

- 117 X/1 - Status Report on Storm Water Drainage and Lakes

XI Building and Housing

- 118 XI/1 - Status Report on public Building and public Housing Activity

XII Gardens, Zoo, recreational Infrastructure

- 119 XII/1 - Status Report on Gardens, Tree Planting and Cutting, Zoo and recreational Infrastructure

XIII Primary Education

- 120 XIII/1 - Status Report on Working of Municipal Schools
121 XIII/2 - Status Report on Students studying In Municipal Schools
XIII/3 - Status Report on Infrastructure and educational Facilities at Municipal
122 Schools

XIV Social Welfare, Slums Improvement

- 123 XIV/1 - Demographic Status Report on Slums in the City
124 XIV/2 - Incomes and Employment Status Report on Slums In the City
125 XIV/3 - Status Report on Slums in the City
126 XIV/4 - Status Report on Infrastructure Facilities in Slums

XV Project and Development Works Monitoring

- 127 XV/1 - Progress Report on Development Works
128 XV/2 - Progress Report on Development Works (Summary)
129 XV/3 - Capital (Development) Works Progress Report (individual work-wise)

- 130 XV/4 - Development Works Progress Report (department-wise Summary)
- 131 XV/5 - Capital (Development) Works Progress Report (budget-wise)
- 132 XV/6 - Status Report on delayed Works
- 133 XV/7 - Status Report on Works with more than 10 percent Cost Variations

XVI Public (City)Transport

- 134 XVI/1 - Comparative Information on Income from Sale of Tickets and Passes
- 135 XVI/2 - Performance Measurement by various Indicators
- 136 XVI/3 - Performance Measurement by various Indicators (detailed)

XVII Miscellaneous/common Formats for all Departments

- 137 XVI/1 - Stock Position of important raw Materials
- 138 XVI/2 - Status Report on Complaints Redressal
- XVI/3 - Status Report on Vehicular
Efficiency
- 139
- 140 XVII/4 - Clearance of Letters, Complaints and Notice received
- 141 XVII/5 - Clearance of Letters, Complaints and Notice received

MIS Format No. - I/A/1

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Summarised Report - Total Posts sanctioned, filled and vacant

General Administration (Establishment) Department

Month :

Sr. No.	Employees Cadre Particulars	Total Number of Posts sanctioned	Additional Posts sanctioned During the Month	Total (3+4)	Total Number of Posts filled	Additions during the Month	Reduction during the Month	Total Number of Posts filled by End of the Month (6+7-8)	Number of vacant Posts (5-9)	Remarks
1	2	3	4	5	6	7	8	9	10	11
	Total									

Submitted by : Office Superintendent

Submitted to : Municipal Commissioner/Dy. or Asst. Munic. Commissioner (Establishment)

ABC MUNICIPAL BODY**MANAGEMENT INFORMATION SYSTEM****Department-wise Posts sanctioned, filled and vacant****General Administration (Establishment) Department**

Month :

Sr. No.	Department	Employee Cadre Particulars	Posts Sanctioned	Additional Posts sanctioned during the Month	Total (3+4)	Posts filled at the Beginning of the Month	Posts filled during the Month	Posts Vacated during the Month	Net Posts filled Status (6+7-8)	Posts vacant at the End of the Month (5-9)	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
	Total										

Submitted by : Office Superintendent**Submitted to :** Municipal Commissioner/Dy. or Asst. Municipal Commissioner
(Establishment)

MIS Format No. - I/A/3

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Posts sanctioned, filled and vacant

Monthly Report by XYZ Department

Month:

Sr. No.	Cadre	Posts sanctioned	Posts filled	Posts vacant (3-4)	Staff deployed from other Departments	Staff deployed to other Departments	Net Staff Position (5+6-7)
1	2	3	4	5	6	7	8
	Total						

Submitted By : Office Head

Submitted To : Municipal Commissioner, Head of Department and Central Establishment Department

ABC MUNICIPAL BODY**MANAGEMENT INFORMATION SYSTEM****Status Report on Schedule Cast/Schedule Tribe/Other Backward Class Posts sanctioned filled and vacant
(summarised)****General Administration (Establishment) Department****Month :**

Sr. No.	Employee Cadre Post	Number of Posts to be filled under S.C. Quota	Numbers of Posts filled under S.C. Reservation.	Deficit (3-4)	Number of Posts to be filled under S.T. Reservation	Number of Posts filled under ST Reservation	Deficit (6-7)	Number of Posts to be filled under OBC Reservation	Number of Posts filled under OBC Reservation	Deficit (9-10)	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
	Total										

Submitted by : Office superintendent**Submitted to : Municipal Commissioner/Dy. or Asst. Commissioner (Establishment)**

MIS Format No. - I/A/5

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on daily-wage Employees (summarised)

General Administration (Establishment) Department

Month :

Sr. No.	Particulars of Posts/Cadre	Sanctioned Post (Number)	Daily-wagers Composite (Average)	Daily-wagers current Month (Average)	Variation (positive or negative)	Daily-wagers as percentage of total Employees
1	2	3	4	5	6	7
Total						

Submitted by : Office Superintendent/Establishment officer

Submitted to : Municipal Commissioner/Dy.or Asst. Municipal Commissioner

MIS Format No. - I/A/6

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on daily-wage Employees (detailed)

General Administration (Establishment) Department

Month :

Sr. No.	Particulars of Posts/Cadre	Sanctioned Posts (Number)	Day/Date							Per Day (Average) Total Number of Days
			1st	2nd	3rd	4th	5th	29th	30th	
1	2	3	4	5	6	7	8	9	10	11
Total										

Submitted by : Office Superintendent/Establishment Officer

Submitted to: Municipal Commissioner/Dy.or Assistant Municipal Commissioner

MIS Format No. - I/A/7

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on daily-wage Employees becoming permanent

General Administration (Establishment) Department

Month :

Sr. No.	Total Number of daily-wage Employees	Total Number of daily-wage Employees under 'to-be-made permanent' Category	Addition during the Month to the 'to-be made permanent' Category	Daily-wage Employees made permanent during the Month.	Total Number of daily-wage Employees 'yet-to-be-made permanent'	Remarks
1	2	3	4	5	6	7
	Total					

Submitted by : Office Superintendent/Establishment Officer

Submitted to: Municipal Commissioner/Dy. or Assistant Municipal Commissioner

MIS Format No. - I/A/8

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Employees under disciplinary Action

General Administration (Establishment) Department

Month :

Sr. No.	Disciplinary Details	Number of Cases	Ageing Analysis				Remarks/ explanatory Note
			Pending for 1 to 6 Months	Pending for 6 to 12 Months	Pending for 1 to 2 Years	Pending over 2 Years	
1	2	3	4	5	6	7	8
	Total						

Submitted by : Office Superintendent/Establishment Officer

Submitted to : Municipal Commissioner/Dy. or Asstt. Municipal Commissioner

MIS Format No. - I/A/9

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Terminal Benefit Payment Status Report

Establishment Department/Accounts Department

Month :

Sr. No.	Terminal Benefits Details	Total Number of pending Cases at the Start of the Month	Number of Cases added during Month	Total Number of Cases (3+4)	Number of Cases cleared terminal Benefits paid	Total Number of pending Cases at the End of the Month (5-6)	Pendency Details			Ageing Analysis			Remarks
							Preparation Stage (in all Depts.)	Verification Stage (in Audit Dept.)	Payment Stage (in A/C's Dept.)	Pending over 3 Months	Pending over 6 Months	Pending over one Year	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Pension												
2	Gratuity												
3	Provident Fund												
4	Leave Salary												
5	Link-Insurance												

Submitted by : Office Superintendent/Establishment Officer

Submitted to : Municipal Commissioner/Dy. or Asstt. Municipal Commissioner

MIS Format No. - I/A/10

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on Employee Absenteeism (summarised)

General Administration (Establishment) Department

Month :

Sr. No.	Name of Department	Posts sanctioned	Posts filled	Average Employees present per Day	Average Employees absent per Day	Reasons for Absenteeism	Action taken
1	2	3	4	5	6	7	8
	Total						

Submitted by : Office Superintendent/Establishment Officer

Submitted to : Municipal Commissioner/Dy. or Asstt. Municipal Commissioner

MIS Format No. - I/A/11

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on Employee Absenteeism (detailed daily Report)

----- Department

Month :

Sr. No.	Name of Post/Cadre	Posts sanctioned	Posts filled	Employees present	Employees absent	Reasons of Absenteeism	Granted/ non-granted	If not granted Action taken
1	2	3	4	5	6	7	8	9
	Total							

Submitted by : Head of Department

Submitted to : Establishment Officer for Compilation

MIS Format No. - I/A/12

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Governments' Letters pending for Reply Report

Department -----

Month :

Sr. No.	Department/ Issue	Number of Letters pending	New Letters received	Letters replied/ complied	Total Number of pending Letters at the End of Month (3+4-5)	Letters pending at the End of the Month (pendency Analysis)				Action Taken/ Reasons
						Pending more than 15 Days	More than 30 Days	More than 45 Days	More than 60 Days	
1	2	3	4	5	6	7	8	9	10	11

Submitted by : Office Head or Head of Department

Submitted to : Municipal Commissioner/ Dy. or Asstt. Municipal Commissioner/Establishment Officer for Compilation

MIS Format No. - I/A/13

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Pending Audit Objections/Paras Status Report

----- Department

Month :

Sr. No.	Name of Department	Pending Audit Paras/ Objections	New Audit Paras raised	Audit Paras cleared during the Month	Audit Paras pending at the End of Month	Remarks
1	2	3	4	5	6	7
	Total					

Submitted by: Office Head or Head of Department

Submitted to: Municipal Commissioner/Audit Officer

MIS Format No. - I/A/14

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on Training to Municipal Employees

General Administration (Employee Training) Department

Month :

Sr. No.	Employee Cadre & Class	Number of Employees under each Cadre	Number of Employees who have not received Training	Number of Employees who have received Training but due for further Training	Number of Employees trained during the Period		Performance against Training need	Remarks
					in-house Training	outside Training		
1	2	3	4	5	6	7	8	9
	Total							

Submitted by: Office Head or Head of Department

Submitted to: Municipal Commissioner/ Audit Officer

MIS Format No. - I/B/1

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Pending Cases filed by Municipal Body - Ageing Analysis

Legal Department Ageing Analysis

Month :

Sr. No.	Department/Subject Service concerned	Number of Cases pending	Pending for 0 - 6 Months	Pending for 6 - 12 Months	Pending for more than 1 Year	Pending for more than 2 Years	Action taken/ Proposed
1	2	3	4	5	6	7	8
1	Establishment Matters						
2	Building Rules Violation						
3	Land & Estate Matters						
4	Municipal Tax Matters						
5	Contractual Matters						
6	Encroachment Removal						
7	Accidental Claim Matters						

Submitted by : Legal Officer

Submitted to : Municipal Commissioner or Dy./Asstt. Municipal Commissioner

MIS Format No. - I/B/2

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Annual Status Report on Pending Court Cases filed against the Municipal Body

Legal Department

Month :

Sr. No.	Municipal Service or Subject Matter	Number of Cases		Ageing Analysis				
		with Injunction	without Injunction	Pending for 6 Months	Pending for 1 Year	Pending for 2 Years	Pending for 3 Years or more	Action taken/ proposed
1	2	3	4	5	6	7	8	9

Submitted by : Legal Officer

Submitted to : Municipal Commissioner, Dy. or Asstt. Municipal Commissioner

MIS Format No. - I/B/3

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Annual Status Report on legal Cases filed against Municipal Body

Legal Department

Year :

Sr. No.	Details regarding Court/ Subject Matters	Number of Cases pending at the Beginning of the Year	New Cases filed against body during the Year	Cases finalised by the Courts		Number of Cases pending at the End of the Year (3+4) - (5+6)	Remarks
				In favour of MB	Against MB		
1	2	3	4	5	6	7	8

Submitted by : Legal Officer

Submitted to : Municipal Commissioner , Dy. or Asstt. Municipal Commissioner

MIS Format No. - I/B/4

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Annual Status Report on legal Cases filed by ABC Municipal Body

Legal Department

Year :

Sr. No.	Details regarding Court	Number of Cases pending	New Cases filed by ABC Municipal Body	Cases finalised by the Court		Number of Cases pending at the End of the Year (3+4)-(5+6)	Remarks
				In favour of Municipal Body	Against Municipal Body		
1	2	3	4	5	6	7	8

Submitted by : Legal Officer

Submitted to : Municipal Commissioner, Dy. or Asstt. Municipal Commissioner

MIS Format No. - I/B/5

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Performance Evaluation of Lawyers hired by ABC Municipal Body

Legal Department

Month :

Sr. No.	Name of Lawyer	Number of Cases handled		Final Results		Success Rate	
		Filed against a Municipal Body	Filed by a Municipal Body	In favour of the Municipal Body	Against the Municipal Body	%	%
1	2	3	4	5	6	7	8

Submitted by : Legal Officer

Submitted to : Municipal Commissioner; Dy. or Asstt. Municipal Commissioner

ABC MUNICIPAL BODY
MANAGEMENT INFORMATION SYSTEM
Status Report on Assessment of Properties (detailed)
Tax Revenue (Assessment) Department

Month :

Sr. No.	Number of Building Occupation Certificates given	Number of Buildings assessed as per O.C. Advice during the Month	Buildings Pending (having O.C.) for Assessment.	Number of Applications received for the Assessment from the People	Number of Buildings assessed against Application	Assessment Applications pending	Unassessed Buildings traced out by Depts.	Number of default Buildings assessed	Default Buildings pending for Assessment
1	2	3	4	5	6	7	8	9	10
	Total								

Submitted by : Assessment Officer

Submitted to : Municipal Commissioner, Dy. or Asstt. Municipal Commissioner (Revenue)

MIS Format No. - I/C/2

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on Assessment of Properties (summarised)

Tax Revenue (Assessment) Department

Month :

Sr. No.	Buildings not assessed at Beginning of the Month	Additional Buildings to be Assessed	Number of Buildings assessed during the Month and Notice served	Objections received against the Assessment.	Objection Cases cleared during the Month	Increase in total Assess-ment Value	Increase in Tax Demand	Buildings pending for Assessment at End of the Month	Objection Applications pending at End of the Month	Remarks
1	2	3	4	5	6	7	8	9	10	11
	Total									

Submitted by : Assessment Officer

Submitted to : Municipal Commissioner; Dy. or Asstt. Municipal Commissioner (Revenue)

MIS Format No. - I/C/3

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on Tax Litigations

Tax Revenue (Assessment) Department

Month :

Sr. No.	Zone	Number of legal Cases against Tax Assessment by a Municipal Body	New Cases filed during the Month	Cases finalised during the Month	Cases pending	Tax Amount locked in pending Cases	Efforts for out of Court Settlements or Reasons for Litigations
1	2	3	4	5	6	7	8
	Zone - A						
	Zone - B						
	Zone - C						
	Zone - D						
	Total						

Submitted by : Assessment Officer

Submitted to : Municipal Commissioner; Dy. or Asstt. Municipal Commissioner (Revenue)

MIS Format No. - I/C/4

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on Assessment Work (employee-wise)

Tax Revenue (Assessment) Department

Month :

Sr. No.	Name of Assessment Officer	Number of Cases pending for Assessment	New Cases given for Assessment	Cases assessed during the Month	Number of Cases pending at the End of the Month	Total Number of Cases assessed since 1st of April	Number of Objections against these Assessment Orders	Number of Tax Litigations filed against Assessment	Number of Complaints Received Against Assessment Officers
1	2	3	4	5	6	7	8	9	10
	Total								

Submitted by : Chief Assessment Officer

Submitted to : Municipal Commissioner, Dy. or Asstt. Municipal Commissioner (Revenue)

MIS Format No. - I/C/5

ABC MUNICIPAL BODY
MANAGEMENT INFORMATION SYSTEM

Status Report on Clearance of Tax objections raised by people
Tax Revenue (Assessment) Department

Month :

Sr. No.	Name of the Appellate Officers	Number of Tax Objections pending	No. of Tax Objections received Notice served	Number of Tax Objection Cases cleared during the Month		Number of Court Cases arising out of appellate Order	Net Increase or Decrease in the Tax Demand (As a Result of appellate Order)	Remarks
				In favour of Tax Payer	In favour of Municipal Body			
1	2	3	4	5	6	7	8	9

Submitted by : Assessment Officer

Submitted to : Municipal Commissioner, Dy. Or Asstt. Municipal Commissioner (Revenue)

MIS Format No. - I/D/1

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on Preparation of various types of Bills by Electronic Data Processing (EDP) Department

Month :

Sr. No.	Details of Job/ Type of Bills	Data received from Dept./Date	Data Entry Status	Verification Validation	Correction of Data	Printing of Data/Bills		Despatching of Prints/Data	Remarks
						Targeted Quantum	Actual Position		
1	Property Tax Bills								
2	Water Charge								
3	Sewerage								
4	Advertisement								
5	Salary (Pay-Roll data)								
6	Others								

Submitted by : Director IT or E.D.P. Officer

Submitted to : Municipal Commissioner, Dy. or Asstt. Municipal Commissioner

MIS Format No. - I/D/2

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Tax Recovery Performance Report (Summarised)

Tax Revenue (Recovery) Department

Month :

(Rs. In
Lacs)

Sr. No.	Particulars / Name of Tax	Demand				Recovery								Pending Recovery			
		Arrears past Tax Demand	Current Year Tax Demand	Supplem entary Current Tax Demand	Total Demand	Pertaining to past Year		Against current Year Tax Demand		Against current Suppl- ementary Demand		Total Recovery		Past Years	Current Year	Supplem entary	Total
						Amount	%	Amount	%	Amount	%	Amount	%				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Submitted by : Recovery Officer																	
Submitted to : Municipal Commissioner, Dy. or Asst. Municipal Commissioner, Chief Accountant																	

MIS Format No. - 1/D/3

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Statement on Total Tax Demand (Detailed)

Tax Revenue (Recovery) Department

Month : (Rs. in Lakhs)

Sr. No.	Particulars of Tax	Past Year Tax Demand					Current Year Tax Demand					Supplementary Tax Demand					Total Demand				
		East Zone	West Zone	North Zone	South Zone	Total	East Zone	West Zone	North Zone	South Zone	Total	East Zone	West Zone	North Zone	South Zone	Total	East Zone	West Zone	North Zone	South Zone	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	Total																				

Submitted by : Recovery Officer

Submitted to : Municipal Commissioner, Dy. or Asstt. Municipal Commissioner

MIS Format No. - 1/D/4

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Statement on Total Tax Recovery (Detailed)

Tax Revenue (Recovery) Department

Month : (Rs. in Lakhs)

Sr. No.	Particulars of Tax	Against Past Year Tax Demand					Against Current Year Tax Demand					Against Supplementary Tax Demand					Against Total Demand				
		East Zone	West Zone	North Zone	South Zone	Total	East Zone	West Zone	North Zone	South Zone	Total	East Zone	West Zone	North Zone	South Zone	Total	East Zone	West Zone	North Zone	South Zone	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	Total																				

Submitted by : Recovery Officer

Submitted to : Municipal Commissioner, Dy. or Asstt. Municipal Commissioner

MIS Format No. - 1/D/5

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Statement on Total Pending Tax Dues (Detailed)

Tax Revenue (Recovery) Department

Month :

(Rs. in Lakhs)

Sr. No.	Particulars of Tax	Pertaining to Past Year Tax Demand					Pertaining to Current Year Tax Demand					Pertaining to Supplementary Tax Demand					Pertaining to Total Demand				
		East Zone	West Zone	North Zone	South Zone	Total	East Zone	West Zone	North Zone	South Zone	Total	East Zone	West Zone	North Zone	South Zone	Total	East Zone	West Zone	North Zone	South Zone	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	Total																				

Submitted by : Recovery Officer

Submitted to : Municipal Commissioner, Dy. or Asstt. Municipal Commissioner

ABC MUNICIPAL BODYMANAGEMENT INFORMATION SYSTEMStatement on Ward Wise / Block wise Tax RecoveryTax Revenue (Recovery) Department

Month :

(Rs. in Lakhs)

Sr.	Particulars	East Zone				West Zone				South Zone				North Zone				Total			
No.	Tax Source	Tax Dem and	Tax Reco very	Tax Dem And	Tax Reco very	Tax Dem and	Tax Reco very	Tax Dem and	Tax Reco very	Tax Dem and	Tax Reco very	Tax Dem and	Tax Reco very	Tax Dem and	Tax Reco very	Total	Tax Dem and	Tax Reco very	Tax Dem and	Tax Reco very	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	Total																				

Submitted by : Recovery Officer

Submitted to : Municipal Commissioner, Dy. or Asstt. Municipal Commissioner

MIS Format No. - I/D/7

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM
Tax Recovery - Status Report (employee-wise)
Tax Revenue (Ward Office/Recovery) Department

Month :

Sr. No.	Name of Employee	Responsible for Block/Ward	Total Demand along with past Arrears	Total Recovery against the Demand till Date	% Recovery	Target given for the Month	Recovery against the Target	% Performance	Remarks
1	2	3	4	5	6	7	8	9	10
	Total								

Submitted by : Ward Officer, Ward Level Recovery Officer

Submitted to : Municipal Commissioner, Dy. or Asstt. Municipal Commissioner (Revenue)

4										
5										
Tax Amount due above Rs.50,000/-										
1										
2										
3										
4										
5										
Tax Amount due above Rs.25,000/-										
1										
2										
3										
4										
Tax Amount due above Rs.10,000/-										
1										
2										
3										
4										
Tax Amount due above Rs.5,000/-										
1										
2										
3										
4										
5										

Submitted By : Director (IT) or EDP Officer

Submitted To : Municipal Commissioner, Dy. or Asstt. Municipal Commissioner (Revenue)

MIS Format No. - I/E/1

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on Self-Assessment Forms Submission

Tax Revenue(Assessment) Department

Month :

Sr. No.	Particulars of Tax Ward	Number of assessed Properties as per Record (as on 1st of April)	Self-Assessment Forms - first-time Assessment	Self-Assess Forms pertaining to already assessed Properties but with Changes	Self-Assess Forms without any Change compared to past Years	Total Number of Self-Assessment Forms filled during Time Limit (4+5+6)	Tax Payers who have not filled Self-Assessment Forms (3-7)
1	2	3	4	5	6	7	8

Submitted by : Assessment Officer or Revenue Officer, Asst. Municipal Commissioner

Submitted to : Municipal Commissioner, Dy. Municipal Commissioner

MIS Format No. - I/E/2

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on Steps taken against Self-Assessment System Defaulters

Tax Revenue(Recovery) Department

Month :

Sr. No.	Particulars of Tax Wards	Tax Payers who have not filled Self-Assessment Forms by stipulated Date	Self-Assessment Forms filled after stipulated Date to till Date	Penalty Fine etc. recovered	Survey of Tax Payers who have not filed Self-Assessment Forms	Penalty Fine & Tax recovered	Survey of the Tax Payers submitting different Self-Assessment Tax	Penalty Fine & Tax recovered
1	2	3	4	5	6	7	8	9

Submitted by : Assessment Officer or Revenue Officer, Asst. Municipal Commissioner

Submitted to : Municipal Commissioner, Dy. Municipal Commissioner

MIS Formats No. - I/F/1

ABC MUNICIPAL BODY
MANAGEMENT INFORMATION SYSTEM
Octroi Revenue Status Report
Octroi Department

Sr. No.	Particulars	Day of Year :		Daily		Date:	Percentage	% Growth over past Year
		Current Year Figures	Past Year Figures	Amount	%			
		Amount	%	Amount	%			
1	Annual budgeted Target							
2	Annual cumulative Collection till Date and % Performance against Target							
3	Average Octroi Collection per Day (till Date during the Year)							
4	Current Month's Target							
5	Monthly cumulative Collection till Date of the Month and % Performance against Target							
6	Average Octroi Collection per Day (in current Month)							
7	Octroi Collection till last Month							
8	Last Month's Collection							
9	Today's Octroi Collection							

Submitted by : Octroi Superintendent

Submitted to : Municipal Commissioner, Dy. or Asstt. Municipal Commissioner (Octroi)

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Statement on Octroi Revenue (detailed - check post-wise)

Octroi Department

**Day of the
Year :
Date:**

Sr. No.	Name of the Check Post.	Last Year total Income	Last Year Income till Date	Budgeted Income current Year	Current Month's Target	Total cumulative Income till last Month	Today's Income	Total cumulative Income of the Month till Today	% Growth targeted against last Year	% Growth archived compared to last Year	% Performance against annual Target	% Performance against monthly Target.	Average Receipt per Day in the Year	Average Receipt per Day in this Month.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Check post - A													
	Check post - B													
	Check post -C													
	Check post D													
	Total													

Submitted by : Octroi Superintendent

Submitted to : Municipal Commissioner, Dy. or Asstt. Municipal Commissioner (Revenue)

MIS Format No. - I/F/3

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Octroi Revenue - No-Bill Assessment Status Report

Octroi Department

Month :

Number of No-Bill Assessment Cases pending	Addition during the Month	Assessment of No-Bill Cases during the Month	Amount of Octroi recovered	No-Bill Cases pending for Assessment	Remarks

Submitted by : Octroi Superintendent

Submitted to : Municipal Commissioner, Dy. or Asstt. Municipal Commissioner (Revenue)

MIS Format No. - I/F/5

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Octroi Vigilance Squad Status Report

Octroi Department

Month :

Number of Octroi Evasion Cases traced out	Amount of the Octroi evaded	Compound or Penalty or Compromise Amounts recovered	Any Demand for Octroi raised	Octroi recovered against the demand	Remarks if any
1	2	3	4	5	6
Total					

Submitted by : Octroi Superintendent

Submitted to : Municipal Commissioner, Dy. or Asstt Muni. Commissioner (Revenue)

MIS Format No. - I/F/6

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Non-tax Revenue Status Report

Revenue Department

Month :

Sr No.	Name of Source	Arrears if Any	Demand current Year	Total Demand	Recovery against			Recovery Pending		
					Arrears	Current Year Demand	Total	Arrears	Current Demand	Total
1	2	3	4	5	6	7	8	9	10	11
1	Land Rent									
2	Building Rent									
3	Lease Rent									
4	Parking Contract									
5	Hoarding Rights									
6	Others									

Submitted by : Land and Estate Officer or Revenue Officer, Asst. Municipal Commissioner

Submitted to : Municipal Commissioner, Dy. Municipal Commissioner

MIS Format No. - I/G/1

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Monthly Financial Position

Accounts Department

Month :

Receipts	Actual Receipt			Expenditures	Actual Exp.		
	Amount (Rs.) till last month	Amount (Rs.) in this month	Amount (Rs.) total till date		Amount (Rs.) till last Month	Amount (Rs.) in current Month	Amount (Rs.) total till Date
Opening Balance				Budgeted Expenditure			
Bank Balance				1. Establishment			
Cash Balance				2. Contingency			
Fixed Deposits				3. Operation & Maintenance			
Total				4. Loan Instalment			
Add :				5. Loan Interest			
Budgeted Revenue				6. Expenditure from Grants			
1. Tax Revenue				7. Expenditure from Loan A/c.			
Octroi				8. New Advances			
Property Tax				9. Deposits Refunds			
Water Charge				Sub-Total			

Other Tax				Non-Budgeted Expenditure			
2. Non-Tax Revenue				- Inter-fund transfer			
Rents				- Cheques returned			
Interest				- Excess Income returned			
Income other than Tax				- Accounts payable			
- Return of Advances				Sub-total			
- Deposits received				Total Expenditure			
				Closing Balance			
3. Other Revenue				Cash			
- Revenue Grants				Bank			
- New Loans				Fixed Deposits			
Sub-Total				Total			
Non-Budgeted Receipt							
- Inter fund Transfer							
- Amount received against Cheque returned							
- Accounts receivables							
Total Receipts							

Submitted by : Chief Accountant

Submitted to : Municipal Commissioner, Dy. or Asst. Municipal Commissioner

MIS Format No. - I/G/3

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Statement showing Expenditure against Budget

Accounts Department

Month :

Last Years Data till Date	Sr. No.	Particulars of Expenditure	Budgeted Expenditure Amount	Expenditure till last Month	% against Budget	Expenditure during the Month	Total till Date	% against the Budget	% Growth over last Year
3	1	2	4	5	6	7	8	9	10
		Total							

Submitted by : Chief Accounts Officer

Submitted to : Municipal Commissioner, Dy. or Asstt. Municipal Commissioner (Finance)

MIS Formats No. - I/G/4

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Statement on Investments in Bank Fixed Deposits

Accounts Department

Month :

Sr. No.	Name of Bank	Op. Balance of fixed Deposit	New Investment	Encashment of F.D.	Closing Balance of F.D.
1	2	3	4	5	6
	General Fund				
	Bank - A				
	Bank - B				
	Bank - C				
	Sub-total				
	Sinking Fund				
	Bank - X				
	Bank - Y				
	Bank - Z				
	Sub-total				
	Other Fund				
	Bank - P				
	Bank - Q				
	Sub-total				
	Grand Total				

Submitted by : Chief Accounts Officer

Submitted to : Municipal Commissioner, Dy. or Asstt. Municipal Commissioner

MIS Formats No. - I/G/5

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on Returned/Dishonoured Cheques & Recovery

XYZ Department

Month :

Description	Number	Amount	Remarks
Returned Cheques pending for Recovery Add. : Cheques returned during the Month			
Subtotal			
Less : Recovery against Cheques returned			
Cheques pending for the Recovery at the End of the Month			

Submitted by : Office Head or Head of Department

Submitted to : Chief Accounts Officer, Dy. or Asstt. Municipal Commissioner

MIS Formats No - I/G/6

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Summarised Status Report on Returned/Dishonoured Cheques (monthly Report)

Accounts Department

Month :

Sr. No.	Departments or Zones	Returned Cheques pending for Recovery		Cheques returned during the Month		Recovery against returned Cheques		Returned Cheques pending for Recovery at the End of the Month		Remarks
		No's.	Amount	No's.	Amount	No's.	Amount	No's.	Amount	
		3	4	5	6	7	8	9	10	
1	2									11
	Zone - A Zone - B Zone - C Zone - D Any other Dept.									
	Total									

Submitted by : Chief Accounts Officer

Submitted to : Municipal Commissioner, Dy. or Asstt. Municipal Commissioner (Finance)

MIS Formats No. - I/G/7

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Unadjusted Advances Status Report

Accounts Department

Month :

Sr. No.	Name of Department	Unadjusted Advances pending at the Beginning of the Month	New Advances given during the Month	Advances adjusted during the Month	Unadjusted Advances	Remarks
	Total					

Submitted by : Chief Accounts Officer

Submitted to : Municipal Commissioner, Dy. or Asstt. Municipal Commissioner

MIS Formats No. - I/G/8

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Outstanding Loans/Liability Statement

Accounts Department

Quarterly :

Sr. No.	Name of the Institution	Amount of Loans taken at the Beginning of Quarter	Amount of Loans outstanding at the Beginning of Quarter	New Loans taken in the Quarter	Total Amount of Loans taken at the End of Quarter	Loans repaid during the Quarter	Total Loans outstanding at the End of the Quarter	Remarks
1	2	3	4	5	6	7	8	9
	Total							

Submitted by: Chief Accounts Officer

Submitted to: Municipal Commissioner, Dy. or Asstt. Municipal Commissioner

MIS Formats No. - I/G/9

ABC MUNICIPAL BODY
MANAGEMENT INFORMATION SYSTEM
Projected Monthly Cash-Flow Statement
Accounts Department

Receipt Items	Projected Figures for the Month	Actual Expenditure up to last month	Expenditure Items	Month : Projected Figures for the Month
Opening Balance			Budgeted Expenditure	
Add : Budgeted Receipts			Establishment	
Tax Income			Contingency	
			Operation & Maintenance	
Non-Tax Income			Loan Interest	
			Loan Repayment	
			Grant Exp.	
Grants				
Sub-total			Sub-total	
Non-Income Receipts			Non-Budgeted Expenditure	
- Loan Receipts			- Deposits Refund	
- Deposits Receipts			- Inter-fund Transfer	
- Advances adjusted			- Advances given	
- Inter fund Transfers				
Sub-total			Sub-total	
Grand Total			Grand Total	
			Closing Balance	
Submitted by : Chief Accounts Officer				
Submitted to : Municipal Commissioner, Dy. or Asstt. Municipal Commissioner				

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on Examination of Accounts

Audit Department

Sr. NO.	Department or Section Name	ACCOUNTS EXAMINATION PERIOD	WEEKLY ACCOUNTS EXAMINATION	BALANCE ACCOUNT EXAMINATION	REASONS FOR DELAY IN ACCOUNTS' EXAMINATION	PENDING AUDIT PARAS OF EARLIER PERIOD	AUDIT PARAS CLEARED DURING THE MONTH	REMARKS
		2003 - 2004						
		2003 - 2004						
		2003 - 2004						
		2003 - 2004						
		2003 - 2004						
		2003 - 2004						
		2003 - 2004						
		2003 - 2004						
		2003 - 2004						
		2003 - 2004						
		2003 - 2004						
	Total							

ABC MUNICIPAL BODY
MANAGEMENT INFORMATION SYSTEM
Building Permission Applications Status Report
Town Planning Department & Zones

Sr. No.	Property Category	Total Number of Building Permissions Pending at the beginning of month	New Building Permission Applications Received	New Building Permission given during the month	Pending Building Permission Applications		Number of Building Permission Violations Pending	Number of Building violations reported during the month	Month	
					Over 1 month	Over 2 months			Actions taken	
									Notices served	Encroachment removed
1	2	3	4	5	6	7	8	9	10	11
1	Residential									
2	Commercial									
3	Industrial									
4	Institutional									

Submitted by : Building Permission Officer

Submitted to : Municipal Commissioner, Town Planner, Dy. or Asstt. Municipal Commissioner

MIS Formats No- II/2

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Building Permission Violations Reporting Efficiency Status Report

Town Planning Department/Zones

Month :

Sr. No.	Name of the Inspector/ Zone	Notices served during the Month	B.P. Violations reporting Promptness Analysis				Reasons for Delay in reporting
			At the Time of Plinth	At the Time of first Slab	At the Time after first Slab	At the Time of Completion	

Submitted by : Building Permission Officer or Town Planning Officer

Submitted to : Municipal Commissioner, Town Planner, Dy. or Asstt. Municipal Commissioner

MIS Formats No. - II/3
ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on Building Completion and Violations

Town Planning Department & Zones

Month :

Sr. No.	Property Categories	Total Number of Properties in the City	Total O.C. given till Date.	Pending Applications- for O.C.	New Applications received for O.C.	Total Number of Properties without O.C. Certificate	O.C. given during the Month	Pending O.C. Applications			Actions taken			Amount recovered
								Over 1 Month	Over 3 Months	Over 6 Months	Issue of Notices	Demolition	Regulation	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Submitted by : Building Permission Officer, Zonal Officer, Town Planning Officer

Submitted to : Municipal Commissioner, Town Planner, Dy. or Asstt. Municipal Commissioner

MIS Formats No. - II/4

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Building Regulations Violation Status Report

Town Planning Department/Zone

Month :

Sr. No.	Name of the Inspector	Number of Properties inspected	Type of Building Regulation Violations Found					Notices issued	Compound Fee received	Any other Action taken
			Change of Purpose	Encroachment	Changes in the Building Plans	Others	Others			
1	2	3	4	5	6	7	8	9	10	11

Submitted to : Building Permission Officer, Zonal Officer, Town Planning Officer

Submitted by: Municipal Commissioner, Dy. Municipal Commissioner or Town Planner

MIS Formats No. - II/5

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on Encroachment Removal (summarised)

Town Planning Department

Month :

Sr. No.	Types of Encroachment	Total Number	New Encroachment reported/observed (Number)	Encroachment removed during the Month	Pending Encroachment Removals	Any Fine or removal Charge recovered	Remarks/ Notes
1	2	3	4	5	6	7	8
	Total						

Submitted by : Building Permission/Town Planning Officer, Encroachment Removal Officer

Submitted to : Municipal Commissioner, Town Planner, Dy or Asstt. Municipal Commissioner

MIS Formats No. - II/6

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Daily Report on Encroachments

Town Planning Department

Date :

Sr. No.	Type of Encroachment	Reported by somebody or observed by Municipal Staff	Location	Nature of Encroachment	Additional Information

Submitted by : Building Permission/Town Planning or Encroachment Officer

Submitted to : Municipal Commissioner, Dy., Asstt. Municipal Commissioner or Town Planner

MIS Format No. - III/1

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Report of Streetlight Service in a ABC Municipal Body

Streetlight Department

Month:

Sr. No.	DETAILS OF VARIOUS ROADS	LENGTH OF ROAD IN KM	STREET LIGHTS PROVIDED IN KM	STREET LIGHTS NOT PROVIDED IN KM	REASON FOR NOT PROVIDING STREETLIGHT	PLANNING TO PROVIDE STREETLIGHT		REMARKS	
						IMMEDIATE	PLANNED FOR		
1	OUTER RING ROAD (40M)								
2	INNER RING ROAD (36M)								
3	12/13.5 M								
4	24 M/ 27 M/ 30M								
5	18.0 M WIDTH								
6	24.0 M WIDTH								
7	27.0 M WIDTH								
	Submitted by :	Executive Engineer -Streetlight or Officer-in-charge of Service							
		Municipal Commissioner or City Engineer							

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Streetlight Service Maintenance Status Report

Streetlight Department

Sr. No.	Types of Streetlight	Total Numbe r	Loa d in KW.	New Addition s	Load in KW	Total Numbe r	Load in KW	Month			Total Amou nt spent	Reasons For Variations
								Lamps	Poles	Other		
								Numbe r	Number	Number		
1	Sodium											
	400 W/250W											
	150W/70 W											
2	Mercury											
	150W/70 W											
3	Tube- Fittings											
4	Bulbs											
	Total											

Submitted by : Executive Engineer or Head of Streetlight Department

Submitted to : Municipal Commissioner, City Engineer

MIS Formats No. - III/3

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Streetlight Service Development Status Report

Streetlight Department

Month :

Sr. No.	Category/Nature of Work	New/Conversion of Streetlight Points required in the City		New Streetlight Points erected during the Month	Pending Development Work	
		Immediate	Planned over Year		Immediate	Planned over Period
1	2	3	4	5	6	7

Submitted by : Executive Engineer or Head of Streetlight Service

Submitted to : Municipal Commissioner, City Engineer

MIS Formats No. - III/4

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Streetlight Maintenance Efficiency Report

Streetlight Department Quarterly/Annually:

Sr. No	Name of Material consumed	Average Life	Average Annual Consumption Standard	Existing Install in Nos	Actual total Consumption	Deviation against Standard +ve or -ve	Reasons for Deviations
1	2	3	4	5	6	7	8
1	Sodium Lamps (70W, 150W, 250W, 400W)						
2	Mercury Lamps (80W, 125W, 250W, 400W)						
3	Metal Lamps (80W, 150W, 250W)						
4	Tube – Lights (36W, 40W)						
5	Other Lamps (110W, 200W, 300W)						
6	Ballast For H.P.S.V. For H.P.M.V.						
7	Ignitor						
8	Capacitors						
8	Poles						
	Total						

Submitted by :Executive Engineer (Streetlight), Head of Streetlight Department

Submitted to : Municipal Commissioner, City Engineer

MIS Format No. - III/5
ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on Streetlight Switching (Metering) Point Operations

Streetlight Department

**Quarterly
Report:**

Sr. No.	STREET LIGHT MAINTAINANCE <u>ZONE/ WARD</u>	NUMBERS OF SWITCHING POINTS	AUTOMATI C TIMER OPERATIO N (NUMBERS)	MANUAL OPERATI ON (NUMBER S)	TIMERS INSTALL ED DURING THE QUARTE R	PLANNING FOR AUTOMISATION		PERCENTAG E OF AUTOMISATI ON
						IMMEDIATED	PLANNI NG	
1	2	3	4	5	6	7	8	9

Submitted by : Executive
Engineer

Submitted to : Municipal Commissioner, City
Engineer

MIS Format No. - III/6
ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on ward-wise Streetlight switching Points (Load and Consumption)

Streetlight Department

Monthly

:

-

Sr. No.	WARD NUMBER	NUMBER OF SWITCHING POINT	TOTAL LOAD IN KW	MONTHLY CONSUMPTION IN KWH	MONTHLY ENERGY BILL IN RS.	KWH/KW (5/4)	% VARIATION FROM PREVIOUS MONTH	REASON IF VARIATION EXCEEDS +/- 5%	AVERAGE 6-MONTHLY CONSUMPTION		REMARK
									KWH	R S.	
1	2	3	4	5	6	7	8	9			11

Submitted by :

Submitted to :

MIS Format No. - III/7

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Data Collection Form for Streetlight switching Point

Streetlight Department

-						
Switching Box			Code Number			
Location			Street Light Ward			
			GEB Zonal Office			
<u>Commercial Information</u>						
Account No.			Average Units			
Meter Sr. No.			Calculated Units			
<u>Technical Information</u>						
Ampere Rating			Number of Phases			
Revolution/kwh						
Circuit	Area covered	Tube Light	150WHPSV	250WHP SV	400WHP SV	Lamps
R						

Y						
B						
Total Street Light Luminaries						
Details of Circuit wise Streetlight Load		Total	Load in		Calculate	Actual
Circuit	Area	Fittings	KWs		Amps	Amps
R						
Y						
B						
Submitted by:						
Submitted to:						

MIS Format No. - III/8
ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on Electrical Energy Consumption of all Departments
Streetlight/Energy Audit Department

Month :

Sr. No.	DEPARTMENT	MONTHLY UNITS CONSUMED IN KWH	WATER PUMPED DURING MONTH IN ML	TOTAL MONTHLY BILL AMOUNT IN RS.	UNIT CHARGE RS./KWH	KWH/KL OR KWH/KW	PERCENTAGE CHANGE WITH RESPECT TO PREVIOUS MONTH		AVERAGE CONSUMPTION OF LAST 6 MONTHS		REMARKS
							% AGE KWH	% AGE AMOUNT	KWH	AMOUNT IN RS.	
1	2	3	4	5	6	7	8	9	10	11	12
WATER SUPPLY											
1	SOURCE					KWH/KL					
	DISTRIBUTION					KWH/KL					
WASTE WATER											
2	APS					KWH/KL					
	STP					KWH/KL					
3	STREET LIGHT					KWH/KW					
4	BUILDINGS OF CORPORATION										

Submitted by :

Submitted to :

MIS Format No. - III/9
ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on Variation in Contract Demand & Power Factor in H.T. Connections (Water, Wastewater & others)

Streetlight/Energy Audit Department

Month :

- -

SR. NO.	DETAILS OF H.T. CONNECTION	CONTRACT DEMAND (C.D.) WITH STB	MAXIMUM DEMAND (M.D.)		REASONS IF M.D. IS LESS THAN 75 PERCENT OF C.D.	POWER FACTOR (P.F.)	PENALTY IF P.F. IS BELOW 0.90 IN RS.	REBATE IF P.F. IS ABOVE 0.95 IN RS.
			ACTUAL M.D.	PENALTY IF EXCEEDING C.D.				
1	2	3	4	5	6	7	8	9

Submitted by :

Submitted to :

MIS Formats No. - IV/1
ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on Number of Fires and Resources utilised

Fire Brigade Department

Month :

Sr. No.	Number of Fires		Utilised Manpower Number of Hours	Type of Vehicles	Number of Days on the Roads	Km's travelled	Fuel utilised	Fuel Efficiency Km's per Lt.	Spare Parts utilised	Total amount spent on Maintenance.	Reasons for Overspending/ Underperformance
	Major	Minor									
				Fire Engines Sprinklers Water Tankers							

Submitted by : Fire Brigade Officer

Submitted to : Municipal Commissioner, Dy. or Asstt. Municipal Commissioner

**MIS Formats No. - IV/2
ABC MUNICIPAL BODY**

MANAGEMENT INFORMATION SYSTEM

Status Report on Number of Fires and Loss of Lives/Resources

Fire Brigade Department

Monthly:

Sr. No.	Date	Name of Fire Station	Call Details		Cause of Fire	Utilised		Time of Departure & Time of Reaching Spot	Number and Types of Vehicles used	Injured	Deaths	Loss of Property Description
			Address	Other Details		Manpower	No. of Hours					

Submitted by : Fire Brigade Officer

Submitted to : Municipal Commissioner, Dy. or Asstt. Municipal Commissioner

MIS Formats No. - IV/3

ABC MUNICIPAL BODY
MANAGEMENT INFORMATION SYSTEM
Status Report on High-rise Buildings' Fire Safety
Fire Brigade Department

Month :

Sr. No.	Total Number of high-Rise Buildings/ Category	Additions during the Month	Monthly Target for concurrent Inspection	High-rise Buildings inspected during the Month	Performance against the Target %	Notices served to the HR Buildings Violations Fire-Safety Norms	Fees/Fines recovered	Buildings which fulfilled Fire-Safety Norms after Notices	HR Building still under Default
1	2	3	4	5	6	7	8	9	10
	Total								

Submitted by : Fire Brigade Officer

Submitted to : Municipal Commissioner, Dy. or Asstt. Municipal Commissioner

MIS Formats No. - IV/4
ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM
Status Report on Fire Safety in Hazardous Shops and Establishments
Fire Brigade Department

Month :

Sr. No.	Category of Shops and Establishments under Fire & hazardous Act	Total Numbers as of today	Additions during the month	Monthly Target for Concurrent Inspections	Actual Accomplishment against Target	Performance against the Target %	Applications received for new Licences	Applications cleared during the Month	Applications pending at the End of Month
1	2	3	4	5	6	7	8	9	10
1	Establishments under Fire Act								
	A								
	B								
2	Establishments under hazardous Act								
	A								
	B								
	Total								

Submitted by : Fire Brigade Officer

Submitted to : Municipal Commissioner, Dy. or Asstt. Municipal Commissioner

MIS Format No.- V/3

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Solid Waste Management -Staff Position Status Report (Daily Report)

Solid Waste Management or Public Health and Sanitation Department

Date :

Sr. No.	Zone/Ward	Number of Posts of Sweepers sanctioned	Number of Posts Filled	Number of Sweepers present	Absenteeism Ratio %	Areas left unattended	Alternative Arrangements made
1	2	3	4	5	6	7	8
	Total						

Submitted by : Solid Waste Manager or by the Officer-in-charge of Solid Waste Management

Submitted to : Municipal Commissioner, Dy. Municipal Commissioner, Medical Officer of Health, City Engineer

MIS Format No. - V/4

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Collection Point-wise Daily Status Report

Solid Waste Management Department

Date :

Sr. No.	Zone/Wards	Daily Collection Points	Alternate Collection Points	Weekly Collection Points	Total Garbage listed per Day	Batch Log of Non-served Collection Points	Alternative Arrangements made	Remarks
	Zone - A							
	Zone - B							
	Zone - C							
	Zone - D							
	Total							

Submitted by : Solid Waste Manager or the Officer-in-charge of Solid Waste Management

Submitted to : Municipal Commissioner, Dy. Municipal Commissioner, Medical Officer of Health

MIS Format No. - V/5

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on Solid Waste related Project Development Activities

Solid Waste Management Department

Month :

Sr. No.	ACTIVITY	WASTE RECEIVED Metric Ton	WASTE PROCESSED MT.	BY PRODUCT		
				COMPOST IN M.T.	GAS IN M ³	ELECTRIC GENERATION
1	WASTE PROCESSING PLANT					
2	LAND FILL SITE					

Submitted by : Solid Waste Manager or the Officer-in-charge of Solid Waste Management

Submitted to : Municipal Commissioner, Dy. Municipal Commissioner, Medical Officer of Health

MIS Format No. - V/6

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Overall Efficiency Report (monthly)

Solid Waste Management

Month :

Sr. No.	Parameters	Standard Value	Monthly Actual Value	%	Reasons for Deviations
1	Sweepers/Staff	Number of Posts Filled	Average Number of Sweepers present every Day	% of Absenteeism	
2	Vehicles	Number of Vehicles	Average Number of Vehicles on Road every day	% of off-route ratio	
3	Vehicle Trips	Number of Vehicles Trips possible	Average Number of Trips made every Day		
4	Generation of	Population X	Average daily		

	Garbage	per Capita Waste	Garbage		
		Generation per Day	Generation		
5	Removal of	Vehicle Trips	Actual Trips	% of	
	Garbage	X Capacity	X Capacity	Garbage	
			Average Garbage	removed	
			removed daily	every Day	
6	Garbage	KM's per litres.	Total Number of		
	Vehicles Fuel		travelled. Total		
	Efficiency		Fuel consumed		
7	Collection Point	Total Number of	Average Number of		
		Collection Points	Collection Points		
		(formal/informal)	cleaned every Day		
8	Garbage	M.T. to be	Actual processed		
	Processing	Processed			
9	Landfill				
10	Solid Waste Collection by NGO / Private Operator	Solid Waste to be collected by NGO or private Operator	Solid Waste actually collected and transported	% Performance against Target	

Submitted by : Solid Waste Manager

Submitted to : Municipal Commissioner, Dy or Asstt. Muni Commissioner

MIS Format No. - V/7

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on Public Toilets

Solid Waste Management Department

Month :

Sr. No.	Particulars of geographical Area/ Ward/ Zone	Number of existing public Toilets	Existing but not operational	Number of Toilets repaired during the Month	Number of public Toilets at inappropriate Location	Number of additional public Toilets required in the Area	Any new Addition during the Month	Number of Complaints received against public Toilets	Number of Complaints attended
1	2	3	4	5	6	7	8	9	10
	Zone - 1								
	Ward A								
	Ward B								
	Zone - B								
	Ward C								
	Ward D								
	Total								

Submitted by : Solid Waste Manager or Officer-in-charge of Solid Waste Management

Submitted to : Municipal Commissioner, Dy. Municipal Commissioner, Medical Officer of Health

MIS Format No. - VI/1

ABC MUNICIPAL BODY
MANAGEMENT INFORMATION SYSTEM
Water Supply System Status Report (monthly)
Water Supply Department

Month :

Sr. No.	System Particulars	Numbers	Standard Working Hours per Day	Average working Hours per Day	Average working Days per Month	Reasons for under-working Breakdown
1	2	3	4	5	6	7
1	Water Treatment Plant					
2	Water Source Jack Wells on River French Wells Tube-Wells					
3	Overhead Tanks					
4	Boosting Stations					

Submitted by : Executive Engineer (Water Supply) or Officer looking after Water Supply Service

Submitted to : Municipal Commissioner, City Engineer

MIS Format No. - VI/2

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on Water Drawl and Supply (detailed - source wise)

Water Supply Department

Month :

Rs No.	Name of Water Source	Installed Capacity (MGD)	Actual Drawl (MGD)	Standard working Hours	Actual working Hours	Break-down reasons	Reason for less drawing of Water	Alternative Arrangement made
1	2	3	4	5	6	7	8	9

Submitted by :Executive Engineer or Officer-in-charge of Water Supply Service

Submitted to :Municipal Commissioner, City Engineer

MIS Format No. - VI/3

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on Water Drawl and Supply (Detailed - distribution point-wise)

Water Supply Department

Month :

Sr. No.	Name of Water	Installed	Actual	Standard	Actual	Break- down	Reason for	Alternative
	Distribution Points	Capacity	Supply	Working	Working	Reasons	less	Arrangement
			(MGD)	Hours	Hours		Water Supply	Made
1	2	3	4	5	6	7	8	9

Submitted by : Executive Engineer or Officer-in-Charge of Water Supply Service

Submitted to : Municipal Commissioner, City Engineer

MIS Format No. - VI/4
MANAGEMENT INFORMATION SYSTEM

Status Report on Water Loss (detailed - distribution point-wise)

Water Supply Department

Month
:

Sr. No.	Name of Water Source	Installed Capacity (MGD)	Actual Drawl (MGD)	Name of Distribution Point	Actual Water received at Distribution Points	Actual Water supplied to Consumers	Water Loss Source to Distribution MGD (4 - 6)	Loss in Percentage Terms	Water Loss Distribution to Consumer (6 - 7)	Loss in % Terms	Reason for Water Loss	Alternative Arrangement made
1	2	3	4	5	6	7	8	9	10	11	12	13

Submitted by :Executive Engineer or Officer-in-charge of Water Supply Service

Submitted to : Municipal Commissioner, City Engineer

MIS Format No. - VI/5
ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on Water Drawl & Supply from Tube Wells (summarised)

Water Supply Department

Month :

Sr. No.	Particulars of Tube Wells	Total installed Capacity (MGD)	Total actual Drawl (MGD)	Standard working Hours	Average working Hours per Tube Well	Number of Tube wells under Break-down	Cumulative Average Drawl (MGD)	Any technical or social Reason for Underperformance
1	2	3	4	5	6	7	8	9

Submitted by : Executive Engineer or Officer-in-charge of Water Supply Service

Submitted to : Municipal Commissioner, City Engineer

MIS Format No. - VI/6
ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Electricity Consumption Status Report

Water Supply Department (O & M)

Month:

Sr. No.	All Types of Sources & Distribution Points	Type of Pump	Installation Date/last repairing Date	KW or HP Details of Pump	Average daily working Hours	Standard Electricity Consumption per Month (Units)	Average Electricity Consumption this Year or in past 6 Months	Actual Electricity Consumption this Month	Deviation from Standard Average	Reasons for Deviation
1	2	3	4	5	6	7	8	9	10	11

Submitted by : Executive Engineer or Officer-in-charge of Water Supply Service

Submitted to : Municipal Commissioner, City Engineer

MIS Format No. - VI/7
ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Illegal Connections Status Report

Water Supply Department

Month :

Sr. No.	Zones/ Sub-Zones	Number of Properties inspected	Number of illegal Connections detected	Compound Fee recovered	Illegal Connections disconnected	Remarks	Recovery received in case regularised
1	2	3	4	5	6	7	8
	Total						

Submitted by : Executive Engineer or Officer-in-charge of Water Supply Service

Submitted to : Municipal Commissioner, City Engineer

MIS Format No. - VI/8
ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on New Water Connections

Water Supply Service Department

Month :

Sr. No.	Water Connection		Applications pending at the Beginning of the Month	Applications received during the Month	Application approved during the Month	Illegal Connections regularised	Total Number of Connections	Applications pending since				
	Type	Number						15 Days	30 Days	60 Days	90 Days	
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Residential											
2	Commercial											
3	Industrial											
4	Institutional											

Submitted by : Executive Engineer or Officer-in-charge of Water Supply Service

Submitted to : Municipal Commissioner, City Engineer

**MIS Format No. - VI/9
ABC MUNICIPAL BODY**

MANAGEMENT INFORMATION SYSTEM

Status Report on Water Contamination (daily/monthly Report)

Water Supply and Public Health Department

Month:

Date	Zone - A		Zone - B		Zone - C		Zone - D		Total	
	Number of	Number of	Number of	Number of	Number of	Number of	Number of	Number of	Total	Total Number of
	Complaints received	Contaminations cleared	Complaints received	Contaminations cleared	Complaints received	Contaminations cleared	Complaints received	Contaminations cleared	Number of Complaints received	Contaminations cleared
1	2	3	4	5	6	7	8	9	10	

Submitted by : Executive Engineer and Public Analysts

Submitted to : Municipal Commissioner, City Engineer, Medical Officer of Health

MIS Format No. - VII/1

ABC MUNICIPAL BODY
MANAGEMENT INFORMATION SYSTEM
Sewerage System Status Report
Sewerage Department (O & M)

Month :

Sr. No.	System Particulars	Number	Standard for working Hour	Average working Hours per Day	Average Value in past Months	Average working Days per Month	Reasons for underworking
1	2	3	4	5	6	7	8
1	Treatment Plants						
2	Pumping Station			Cleaned per Day		Cleaned during the Month	
3	Manholes						
4	Sewer Lines						

Submitted by : Executive Engineer (Sewerage System) or Officer-in-charge of Sewerage Service

Submitted to : Municipal Commissioner, City Engineer

MIS - VII/2

ABC MUNICIPAL BODY
MANAGEMENT INFORMATION SYSTEM
Status Report on Sewerage Generated and Treated
Sewerage Department

Month :

Sr. No.	Particulars	Installed Capacity (MGD)	Total Sewerage pumped/ treated (MGD)	Total Sewerage generated (MGD) 80% of Water Supply	Sewerage left untreated/ not pumped (5 - 4)	Actual Performance against Capacity	Remarks	Pumped to which STP
1	2	3	4	5	6	7	8	9
1	Sewerage Pumping Stations Aps - A Aps - B Aps - C Aps - D							
2	Sewerage Treatment Plants Stp - A Stp - B Stp - C							

Submitted by : Executive Engineer (Sewerage) or Officer-in-charge of the Sewerage Service

Submitted to : Municipal Commissioner, City Engineer

MIS Format No. - VII/3

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Sewerage System - Electricity Consumption Efficiency Report

Sewerage (O & M) Department

Month :

Sr. No.	Electrical Installation	Type of Machinery/ Pumps	Date of Installation and last Reparation	Standard electrical Consumption per Month (Units)	Average Electricity Consumption in past Month	Actual Electricity Consumption this Month	Deviation from standard/ average Value	Reasons for Deviations
1	2	3	4	5	6	7	8	9

Submitted by : Executive Engineer (Sewerage) or Officer-in-charge of Sewerage Service

Submitted to : Municipal Commissioner, City Engineer

MIS Format No. - VII/4

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Illegal Sewerage Connections Status Report

Sewerage (O & M) Department

Month :

Sr. No.	Zones/ Sub-Zones Circles	Number of Properties inspected	Number of Illegal Connections detected	Compound Compromise Fee recovered	Number of illegal Connections regularised	Number of illegal Connections disconnected	Remarks

Submitted by : Executive Engineer or Officer-in-charge of Sewerage Service

Submitted to : Municipal Commissioner, City
Engineer

MIS Format No. - VII/5

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Industrial Sewerage Connections Status Report

Sewerage (O & M) Department

Month :

Sr. No.	Types or Names of Industries	Having captive Treatment Plant or not	Samples taken of Effluent during the Month	Samples failed	Penalty/Compound Fee recovered	Number of habitual Defaulter	Further Action taken
1	2	3	4	5	6	7	8

Submitted by : Executive Engineer (Sewerage) or Officer-in-charge of Service

Submitted to : Municipal Commissioner, City Engineer

MIS Format No. - VII/6
ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on New Sewerage Connections

Sewerage (O & M) Department

Month :

Sr. No.	Sewerage Connections		Applications pending at the Beginning	Applications received during the Month	Applications approved during the Month	Illegal Connections regularised	Total Number of Sewerage Connections	Applications pending since :			
	Type	Number						15 Days	30 Days	45 Days	60 Days
1	2	3	4	5	6	7	8	9	10	11	12

Submitted by : Executive Engineer or Officer-in-charge of Sewerage Service

Submitted to : Municipal Commissioner, City Engineer

MIS Format No. - VII/7

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on Waste Water Treatment

Sewerage Department

Month : _____

Sr. No.	LOCATION OF WASTE WATER TREATMENT PLANT	TREATMENT CAPACITY OF THE PLANT IN MLD	ACTUAL QUANTITY TREATED AVERAGE MLD	TREATED EFFLUENT IS MATCHING WITH POLLUTION CONTROL BOARDS NORM	REASON IF NOT MATCHING	Remarks
1	2	3	4	5	6	7

Submitted by :

Submitted to :

MIS Format No. - VIII/1

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on Issue of Health Licenses for Hotels

Public Health Department

Month :

Sr. No.	Total Number of Health Licenses Issued Earlier	Number of Applications pending at Beginning of Month	Number of Applications received during the Month	Number of Health Licenses issued during the Month	Total Number of Health Licenses issued till Date (2+5)	Pending Applications - Ageing Analysis				Reasons for inordinate Delay
						Over 15 Days	Over 30 Days	Over 60 Days	Over 90 Days	
1	2	3	4	5	6	7	8	9	10	11

Submitted by : Medical Officer of Health

Submitted to : Municipal Commissioner, Dy. Municipal Commissioner

MIS Format No. - VIII/2

ABC MUNICIPAL BODY

MANAGEMENT INFORMATION SYSTEM

Status Report on Inspection of Food Joints

Public Health Department

Month:

Date	Number of Food Joints inspected	Number of Food Samples taken	Number Of Food Samples failed	Fine recovered for failing Samples	Notices issued for unhygienic Conditions	Notices issued to non-licensed Food Joints	Fine recovered	Number of habitual Offenders	Number of Illegal Food Points Removed Closed
1	2	3	4	5	6	7	8	9	10

Submitted by : Food Inspector

Submitted to : Municipal Commissioner, Medical Office of Health

	f. VLT. A									
16	Number of Deaths									
	a. Within 48 Hours									
	I) Accident									
	ii) Disease a. Malaria									
	b. unknown									
	c. others									
	iii) neonatal									
	iv) Still Births									
	b. After 48 Hours									
	I) Accident									
	ii) Disease a. Malaria									
	b. unknown									
	c. others									
	iii) neonatal									
	iv) still Births									
17	Number of Diets supplied									
18	Number of Cloths given to Dhobi									
19	Total Collection of Rupees									
20	Total Expenditure									
21	Physiotherapy Department									
22	dental Unit									
23	Number of medical legal Cases									
24	Ayurvedic Unit									
	Total									

Submitted by : Hospital-in-charge to Medical Officer Of Health - then by M.O.H. to Main Office

Submitted to : Municipal Commissioner, Additional or Deputy Municipal Commissioner