Chapter 1 The research problem

1.1. Background

The African continent falls within the so-called Third World where countries are classified as less developed in contrast to developed First World countries. Effectively this means that when one considers Africa, one does not think of it as an information rich continent. Instead one conjures up the imagery of poverty, drought, underdevelopment, malnutrition, civil war, general political instability, illiteracy, dependency on the West, little or no information technology and unreliable and inadequate telecommunications infrastructure and electricity supply. Africa can thus be described as an extreme case of information dependence. This is rooted in dependence acquired in the colonial period, and is characterised by inadequate data collection procedures, a poor statistical base and a general lack of information about itself. One of the consequences of this so-called African dilemma is a general lack of National Information Policies (NIP) in African countries. The result is that a discussion on Africa's information environment would centre on the setting up of guidelines for information flow, so as to smooth the information transfer process from outside into Africa. According to Sturges, Mchombu and Neill (1996:122) this emphasis on information being obtained from outside and then fed downwards to the citizen, pervaded the development strategies adopted in Africa in the past. The lack of a National Information Policy in turn leads to problems such as the duplication of material, difficult accessibility of information, inappropriate infrastructures being developed and a lack of co-ordination between various agencies. The result is that the information sector of a country receives inadequate resources from its government in order to perform its task adequately, thus adding to the lack of recognition of the role information can play in the development of that country.

It has been suggested that the failures of development programmes in Africa in the past have had a great deal to do with inadequate attention to the environment into which they

were introduced (Sturges, Mchombu and Neill, 1996:128). This stemmed from and was aggravated by a disregard of the information resources available on the continent. In other words, there is a lack of appreciation of the strength of the oral medium and the knowledge that exists within it. Even though there is a decline in its use, traditional channels are still in operation in rural communities. Indigenous African material does exist and is used, but the bulk of information falls into the category of so-called Grey Literature (reports, minutes of meetings, conference papers, theses etc.). Information institutions therefore need to practice sustainable resource management by re-arranging their priorities with the acquisition of local material, including grey literature and indigenous knowledge. Also, within the context of infrastructure, the development of standards and practices for the retention, preservation and retrieval of information of historical and research significance, regardless of its format is an issue (Stone, 1998).

Overall there is a slow growing awareness of information. This is the result of years of co-operation with, and assistance and encouragement from international organisations such as the United Nations Educational Scientific and Cultural Organisation (UNESCO) and the Canadian International Development Research Centre (IDRC). African countries are thus becoming increasingly aware of the fact that information is an indispensable factor in the development and rational use of their resources. There is a greater desire today, by civil society and the general populace, to participate in the governance of their countries. Obviously, effective participation in the process of decision-making by the community can only be accommodated and ensured through greater access to information. According to Abate (1988:97) many African information professionals and researchers have realised that the solution or the salvation of their country, depends on mutual collaboration, more serious consideration of the need for development information and policies and systems which can make that information more readily available. Resource sharing as one option would ensure the availability of national and international information at a fraction of the cost than if each country was to acquire it individually. The importance of involving international organisations is obvious. They have the financial resources to pilot and

support long-term projects and their prestige is capable of influencing the policies of governments more effectively than can be achieved by local agencies.

Worldwide the information industry is one of the fastest growing industries. The development of information systems and services needs to be planned as an integral part of a country's development plan. Its introduction therefore requires careful national planning to ensure that every sector of the economy benefits. Advances in information technology are both an opportunity and a threat to developing countries. The threat is two-fold: firstly rapid development of information technology in industrialised countries renders Less Developed Countries incapable of competing in the international market place, and secondly information technology is a force for major social change. Both these processes need to be monitored and regulated. Technology itself will set the direction of development and will depend on the presence of public policy, with input from all the stakeholders.

1.2. Statement of the problem

1.2.1 Problem statement

In view of the above situation information workers have a significant part to play in the recognition of the role information can play in the development of a country. Although some guidelines already exist, such as Montviloff (1990), situations and conditions differ greatly, even within individual African countries and communities. There is also the problem that the existing guidelines were formed from a First-world perspective and do not take local African conditions into account. Library and Information Services frameworks specifically for South Africa, such as the one by Cillié and Roos (1996), have been suggested in the past. The existing frameworks are however too narrow, and due to technological developments a broader frame of reference is required.

The central question to be posed in this dissertation is thus whether existing National Information Policy formulation guidelines are sufficient and relevant to enable a Third

World country such as South Africa to formulate and legislate a meaningful National Information Policy.

1.2.2. Motivation and context of the problem

Access to information is a form of empowerment. Through empowering people, information allows communities to monitor policy, lobby, learn, collaborate, campaign and react to draft legislation. Information transfer or dissemination must thus take place between the rest of the world, all the way down the hierarchical structure to the person on the lands in rural areas as well as the person on the street. Thus, the removal of obstacles to information flow is one important problem that needs to be ironed out, and a National Information Policy is necessary to ensure the rational and co-ordinated provision and use of information.

One of the consequences of the so-called African dilemma is a general lack of appreciation of the role of information and therefore National Information Policies are almost non-existent. This situation has severely deterred the use of information to solve Africa's socio-economic problems. Weak or non-existent information infrastructures have created an acute information shortage which chronic lack of funds and other important inputs have turned into a vicious circle that has played havoc with all aspects of development in African countries.

Efforts on the part of UNESCO and other donor agencies such as the IDRC to draw up National Information Policies have kept the issue alive and also resulted in some individual efforts. For countries of the United Nations, the initial focus was on the Intergovernmental Programme for Co-operation in the Field of Scientific and Technological Information (UNISIST). Other United Nations activities include the UNESCO concept of National Information Systems (NATIS) and the convergence of these activities and programmes in the General Information Programme (GPI) in the mid 1970's. So many previous attempts at writing information policies in South Africa over the past three decades have been

made, yet nothing substantial has yet been forthcoming. A National Information Policy must take the African context into consideration.

South Africa is seen as a leader within Africa, not only in terms of policies, but also in terms of its First World component with advanced technology and well developed networks according to African standards. South Africa has had a stable infrastructure the past few decades and should be an example not only in political transformation but also with the establishment of important policies that are practical and implementable and specifically suited to African conditions and situations. There is therefore a unique need in South Africa to build a framework that would not only address the Third World component of our society but the First World as well, it is therefore not advantageous to apply a policy that is intended to be universally valid. The purpose of the research is thus to develop a framework of National Information Policy guidelines suitable to especially South African conditions.

1.2.3. Objectives of the study

1. The first objective is to discuss the theory behind what is understood to be an information policy. An information policy shows the way in which information should be managed nationally within a country. The objective is thus to discuss the process that is used by information workers in order to develop a National Information Policy.

2. Case studies of varying formats will be undertaken to learn what has been done in the past with regards to National Information Policy development. By using the positive results of these policies and not making the same mistakes, a unique framework for South Africa can be formed.

3. Related policies overlapping and influencing a National Information Policy will be investigated, as they play an important role in making it clear what a National Information Policy is and where it fits in with regard to other policies.

4. A study will be made of the history of efforts at developing information policies in South Africa. This general background information is important. The main objective of the dissertation is to suggest specific policy guidelines for a National Information Policy in South Africa.

1.3. Demarcation and limitations of the study

Difficulty was experienced in obtaining up to date literature on the subject field due to the fact that in Less Developed Countries such information is seldom published. The bulk of the literature of direct relevance consists of unpublished draft proposals on policies, plans, recommendations and declarations emanating from conferences that concern individual countries or the region in general. Of considerable importance are the articles in periodicals and conference papers, which describe and evaluate existing information systems and infrastructures, or address important topical issues. The scarcity of information on National Information Policies in Africa could reflect a possible stagnation in the field, or be the result of inadequate indigenous information production. Both issues need to be addressed by a National Information Policy.

Information can be used in each and every sector essential for the social welfare of a country. The study focuses on the important role a National Information Policy plays in solving South Africa's social problems. "Information policy transcends any one discipline or profession; and it has political, economic, social, legal, and technological implications" (*National and International Information Policies*, 1991:39). Because of this it is difficult to identify a core literature. "Indeed, a serious problem that confronts information policy researchers is identifying the source material and writings about such policies in the literature" (*National and International Information Policies*, 1991:39). This study is therefore demarcated in terms of keeping to the principles of information management attributed to Information Science as a subject discipline.

Geographically the study specifically investigates the procedures of formulating a policy suitable for South Africa, a Less Developed Country (LDC). There are however, similarities within the countries of the Southern African Development Community (SADC), namely their geography, colonial background, illiteracy and lack of communications infrastructure just to name a few. By making minor adjustments to a South African National Information Policy other Southern African countries can apply the framework to draw up their own National Information Policy. Thus countries such as Angola, Zambia, Zimbabwe, Botswana and Mozambique may use the framework because they

- lack information itself;
- lack means of disseminating information;
- have communication problems;
- lack adequately trained personnel;
- lack infrastructure; and
- lack funds.

Although the study focuses on South Africa, a Less Developed Country, the literature studied includes publications on information policy as experienced in First World countries such as the United States of America (USA) and the United Kingdom (UK). This is so that other countries' perspectives may be gained. Due to constraints of space however only the Third World South East Asian State of Malaysia is presented as a case study.

1.4. Research methodology

An exploratory survey increases familiarity with the subject field and helps to clarify concepts. It is used to prioritise the research and is also used to gather information with practical applications (Powell, 1993). The specific type of exploratory research used in this dissertation is the literature survey, which is supportive of the research to follow.

The initial strategy collected as much data from wherever possible to assess the relative incidence, distribution and interrelations of the variables. The main literature study undertaken concentrated on retrieving specific information as highlighted by the points discussed in each chapter. Certain elements were identified under the relevant chapters and a "conclusion" was drawn up in terms of chapter six, which contains the resulting proposed guidelines for the development of a National Information Policy for South Africa. Traditional bibliographical database searches were undertaken which were later augmented and replaced by several successful Internet searches.

A holistic and natural approach to the resolution of the problem was taken. The theory was studied and supplemented by a case study of Malaysia, a Third World country. This was done because South Africa in its diversity has great differences between a first and Third World society and Malaysia finds itself on many levels in a similar situation. Attention was given to the subjective aspects of human experience and behaviour especially in terms of information seeking, gathering, use and dissemination within the development context.

Use was also made of certain ready processed statistical material by the Bureau for Market Research (BMR) of the University of South Africa (UNISA) on socio-political forecasts for South Africa. Initial insight into the role information plays for development, specifically within the South African context, was obtained through discussions with Mr Anderson (1997).

1.5. Necessity of this study for Information Science

Information in all its forms is an often unacknowledged and invisible prerequisite for the functioning of modern society. The intention is thus to prompt discussion and action in determining and solving the country's information policy priorities. A step in this process is to create a greater understanding of information as a resource, which is added to, exploited, traded and made available within and across national boundaries. This

necessitates the laying of guidelines and policies to form an important framework for the regions Southern African Development Community culture and information discussions. It is important to keep the issue current and this is done by further and new studies in order to improve the development of National Information Policies.

According to the Economic Commission for Africa (1999) the emergence and convergence of information and communication technologies remain at the centre of global, social and economic transformations. The information and communication technology field is made up of Internet service providers, telecommunications services and equipment, information technology equipment and services, media and broadcasting, libraries and documentation centres, commercial information providers, network-based information services and other information and communication activities. Information Science is a multidisciplinary subject and covers all of the above services, thus it is important that Information Science play a leading role in defining National Information Policies which are high on the agenda according to the Economic Commission for Africa (1999). Less Developed Countries are confronted with the challenge to be responsive and flexible to the convergence of these technologies. Thus this study is done within the context of a development perspective.

Initially the formulation of a National Information Policy was targeted at libraries and documentation centres. According to the Economic Commission for Africa (1999), even though early National Information Policies were broader in conceptualisation, evidence shows that they lacked comprehensiveness in terms of contents and coverage. With the emergence of the so-called Information Society (IS), a new dimension was brought to the subject in which information itself is the strategic resource. The increasing application of information technology in traditional information systems and institutions has led to a re-examination of the conventional information rules and policies. The elaboration of Information Technology Policy, an integral part of a National Information Policy, is a major determinant factor in setting up the underlying supporting infrastructure and enhancing the optimal use of the technology. The setting up of a National Information

Policy necessitates the need for a complete re-examination of traditional National Information and Information Technology Policies to account for the new emerging technologies and the need to formulate broad and coherent plans and strategies to advance the development of Third World countries.

A search was done on the Nexus database of current and completed research projects in South Africa, of the Human Science Research Council (HSRC). The search words used were "National Information Policy" and "Information Policy". The search results show that the most recent completed project was a report by Britz and Schoeman (1997) on a corporate information policy, which was completed in 1997. In 1996 Du Plessis completed a report on the interpretation and practical implementation of the right to information in South Africa. The above two studies focussed their attention respectably on a corporate policy and one aspect of a National Information Policy, the right to information. The most recent study in the field of National Information Policy was the National Education Policy Investigation (NEPI) on Library and Information services, completed in 1993. This research was aimed at the role library and information services play as part of the education policy, and was added on as an afterthought. A theoretical reflection on a National Policy for Scientific and Technical Information and the applicability thereof to the South African library and information sciences was completed in 1981, twenty years ago. Already a gap can be noticed, the studies that have taken place, except for the NEPI investigation, concentrated only on a single aspect of a National Information Policy. Studies have been done on National Information Policy covering North America, Europe and the Asia Pacific region. On a smaller scale, Alemna (1995), Boon (1991), Cillié and Roos (1996) and Mchombu and Miti (1992) have studied individual African countries. International efforts such as the African Information Society Initiative (AISI), Pan African Development Information System (PADIS) and UNESCO studies have also taken place.

Current research includes a study of Information Technology Policy, a policy which would influence a National Information Policy, and a current dissertation on a National Information Policy commenced in 1995, by an MBA student, thus one can assume it will

be from a business management point of view. It can thus be stated that a gap exists in research on a National Information Policy from the interdisciplinary subject field of Information Science, making this study all the more important. National Information Policy as a research subject is in itself also difficult because many of the issues are controversial and overlap with other related policies. This alone gives reason for the subject not to be tackled by many researchers, and thus the necessity of this study.

1.6. Clarification of concepts

1.6.1 Information

According to Chambers's Etymological English Dictionary (1957) the word to "inform" means to impart knowledge to, and "information" means intelligence given. To inform then is the process and the agent in that process is information. Information presents itself in terms of a life cycle where many elements play a role. This lifecycle concerns the collection, storage, retrieval and dissemination of information. The term also implies the problem areas of information, such as the information explosion, quality of information, language and the interdisciplinary nature thereof. The central problem regarding information is thus the effective flow, availability and use of information that is needed for effective human research, planning, education, innovation, management and ultimately community development. Characteristics that are typical of information and that make it difficult to be seen as a resource are:

- Information is found in several different forms.
- It is compressible.
- It can be used over and over again. It is extendible, and easily copied (example, photocopies)
- It can be transported.
- It can be shared, it can be passed on easily by personal communication.
- It is long lasting.
- It may substitute other resources.

(Poirier, 1990:266)

The nature of information is such that ownership rights have to be balanced with access rights, this depends on the situation, and has to do with the balance of management of information or the control thereof. The value of information lies in its economic and social benefits. Information is needed for competitive advantage and it is a key resource that people use when making choices in their daily activities. The value of information is not affected by the format it is in, however the format can greatly affect the accessibility of the information.

Several authors have attempted to "define" the term "information" by trying to capture one or more of its characteristics. A few notable interpretations are:

- Information is that which adds to our awareness or understanding of some topic, problem or event (Martin, 1995:1). It can thus be defined as a hierarchical stimulus or experience that is first described as data. When a person uses this data, it then becomes information which leads to knowledge and ultimately intelligence (Martin, 1995:9).

- De Lange, Boon and Britz (1993:3) cite the definition from Swanepoel and Boon where information is defined as any experience or contact that adds new meaning or somehow changes events, lives or experiences.

- Information is that which is used to reduce uncertainty to improve decision making in order to deliver a better service (Blom, 1990:139).

- Carpinter (1991:5) states that information is not a physical entity, but it may be found in physical media. It is the content of information goods (books, audio and visual broadcasts, databases, etc.) and communication. She further states that whether the contents of information goods is informative or not is determined by the subjective experience of the recipient, that is, whether it remains pure data or becomes information leading to knowledge.

Information is perceived as the written or spoken surrogate of knowledge and as the result of data processing, usually formal processing, it reduces uncertainty. Information is

commonly understood as problem-solving, and publicly available information of a general nature that is disseminated through news and advertisement media, or as classified government information that is restricted to a limited number of users.

For the purposes of this dissertation, aspects deemed important have been summarised to form the following description of information:

Information is not a physical entity, but it may be found in physical media, where it is perceived as the written or spoken surrogate of knowledge. The value of information lies in its economic and social benefits by reducing uncertainty in order to improve decision-making by adding to our awareness or understanding of some topic, problem or event. The value of information is not affected by the format it is in, however the format can greatly affect the accessibility of the information. Whether the content of information goods is informative or not is determined by the subjective experience of the recipient.

1.6.2 Policy

A policy can be formulated at the international, regional, national or institutional level. A policy is a set of principles, which guide a course of action for the achievement of a given goal (Montviloff, 1990: 7). According to Menou (1991:50) a policy consists of the following:

- An image of the desired state of affairs (goals).
- Specific means by which the realisation of the goals is to be brought about.
- The assignment of responsibilities for implementing the means.
- A set of rules or guidelines regulating the implementation of the means.

Public policy is a deliberate and binding action by responsible and authoritative organs of the state designed to influence the behaviour of society or substantial parts thereof. It is formulated to bring about a systematic way of solving fundamental national problems (Abate, 1988:72). Policies are embodied in the so-called policy instruments, e.g. constitution, laws, regulations, international treaties etc.

Policy is a statement of the norms in society, as perceived by the government of the day, and ideally, is a written form of authority that essentially takes over where humans are unable to provide for themselves that which is the government's prerogative according to Rabar (1995:6). Thus policies are declarations of intent by governments to undertake action in given sectors of an economy. They establish rules and regulations, as well as methodologies for action, and at the same time indicate the natural and other resources required for their execution (Kisiedu, 1988:3).

According to Mudenda (1997) a policy also provides a set of criteria for choosing among competing alternatives. A policy statement is backed by a policy instrument, which is made up of three components:

1) A legal device which gives a policy its normative force.
2) An organisational framework that ensures the implementation of a policy after it has been adopted.
3) An operational mechanism such as a government department which overseas the day-to-day implementation of a policy.

Thus a public policy can be defined as a written form of authority declaring a government's intent on action in a certain sector of the economy by means of stating goals, regulations and methodologies, with the assignment of responsibilities for the actions.

1.6.3 National Information Policy

According to Lundu (1995:52) an information policy must stem from what one conceptualises information to be, the problem herein lies with the deficiency of a precise definition of the term information. With the formulation of a National Information Policy, governments thus announce their perception of and commitment to development in this particular sector (Mohammed, 1991:132). According to Montviloff (1990:7) an information policy would provide guidance for the design of a strategy and programmes for the development and use of information resources, services and systems. A National

Information Policy, according to Lundu (1995:53) should be broad enough to address all issues. "A policy thus shows you what game is to be played and what are the rules of the game. It does not tell you how to play the game" (Menou, 1991:50).

Other definitions include:

- "Information policy is a set of interrelated principles, laws, guidelines, rules, regulations, procedures and judicial interpretation that guide the oversight and management of the information life-cycle: the production, collection, distribution/dissemination, retrieval and retirement of information. Information policy also embraces access to, and use of information." (*National and International Information Policies*, 1991:4).

- Rehman (1996:184), defines information policy as a "… group of policies concerning the collection, storage, retrieval and dissemination of information, including the use of information technologies and the provision of information services, in the furtherance of the collection, storage, retrieval and dissemination of information"

According to Rowlands (1996:15) a National Information Policy should be flexible, dynamic and responsive to changing circumstances, that both shapes and responds to events and thus can be regarded either as an independent or a dependent variable in scientific policy studies. Information policy consists of a hierarchy of three levels according to Rowlands (1996:15):

1) Infrastructural policies such as employment law and education policy, which provides a social and economic context for its activities.

2) Horizontal information policies with specific applications and impact across the whole of the information sector.

3) Vertical information policies, which have a specific application to a particular information sector.

In this dissertation the term National Information Policy is used to mean an integrated national policy, in contrast to sectoral plans and policies which are named according to the

sector or policy issues. Furthermore a National Information Policy should identify the requirements, make provision for necessary resources and promote the effective use of information for the betterment of society. Priority areas should be identified and be allocated adequate resources to ensure success. This process may lead to the sectoral development of information plans, which requires co-ordination to avoid duplication. The beneficiaries of a National Information Policy are those who will receive, be influenced by, and hopefully support the strategies and action plans that evolve from information policies. Information strategies and plans answer the question "how" and "what mechanisms" are required for implementation and are thus not to be confused with a National Information Policy.

A National Information Policy can thus be defined as a set of general guidelines providing a framework to assist those in authority to allocate resources for the planned and better co-ordinated development of information infrastructures. Thus the information resources, including the services and systems of a country, may be effectively capitalised on to play their role in the development of the country. This is achieved by providing the necessary information and means of access to, and use of information for improving the economic, social and educational well being of the country's population.

1.7. Chapters

As introduction to the rest of the dissertation, a brief outline of what each chapter discusses is provided.

Chapter two contains a study of the theory of a National Information Policy. This includes the motivation behind why a National Information Policy is needed, the philosophical approaches for tackling a policy, the principles of such a policy, and the issues that need to be addressed, including information related policies that overlap and may influence a National Information Policy.

Chapter three presents the theoretical basis for the development of a National Information Policy for South Africa by providing an overview of past proposals for the information policy process in South Africa. The various role players and steps in the formulation of a National Information Policy are discussed and then an own approach towards formulating and implementing a National Information Policy in South Africa is proposed.

A case study of Malaysia, a Less Developed Country of the Asia Pacific region that has implemented a National Information Policy, is provided in Chapter four. The objective is to demonstrate a model that South Africa can learn from and to prevent that the same mistakes are made.

In chapter five a critical evaluation of the evolution of the South African National Information Policy process from the Library and Information Services (LIS) and the information communications technology (ICT) viewpoint is given. South Africa is also placed within its past perspectives and present context.

Chapter six is the culmination of what is learnt throughout the previous chapters. Guiding principles for a National Information Policy in South Africa and what issues it should tackle are discussed followed by proposed policy guidelines presented in terms of a suggested policy development process.

The seventh and final chapter deals with any findings, recommendations and conclusions that are made.

1.8. Summary

This chapter gives an outline of what can be expected in the rest of the dissertation. Objectives of the study are discussed as well as motivation for the study. Important concepts as well as limitations and a demarcation of the study are also provided.

The next chapter reviews the theory of National Information Policies on which this dissertation is based. An outline of the motives for drawing up a National Information Policy is presented. It also provides a perspective on the principles and the need for information for the development of a country.

Chapter 2 Theory of National Information Policy

2.1. Introduction

A National Information Policy arranges matters such as the freedom of information and intellectual property protection, as well as enabling the flow of information between governments and the people in the community and vice versa. The best information services are of little value to persons unable to fulfill the basic needs of daily existence and who do not have the occasion to access information. In such a case the society could split into information haves and information have-nots, which must be spared at all costs. The successful implementation of a National Information Policy requires the existence or the establishment of effective national information infrastructures, adequate skilled human resources, supportive facilities, and appropriate financial provisions. Infrastructures and operational characteristics decide whether policies, however well formulated, are likely to succeed. However, before starting the policy development process the underlying theoretical issues need to be understood. This chapter thus provides the theoretical foundation for the rest of the dissertation. To begin with, the reasons why a country should embark on developing a National Information Policy are discussed, followed by the different philosophical approaches towards formulating a National Information Policy. The principles underlying as well as the pertinent issues to be covered by such a policy are also identified.

2.2. Reasons for a National Information Policy

2.2.1 Background

A National Information Policy is required to ensure the harmonious implementation and operation of information resources, services and systems. It also implies more effective participation in regional and international information systems and networks. Menou (1991:53) identifies fear as the major driving force behind information policies where a

National Information Policy is used to overcome the mistrust of information. More recently, it is believed that the development of the World Wide Web (WWW), as well as an increase in the number of computers both in the workplace and at home has meant that information now plays a more important role in our society and economy, while blurring the line of traditional information delivery services (*National Information Policies and Information Infrastructure in Canada*, 1995). Policies could also be the result of a need to regulate the competition between social or economic forces. A leading and powerful constituency, organisation or branch of industry can impose a policy generally when it has a *de facto* monopoly or overriding domination in the considered sector (for example Microsoft). They tend to establish particular concerns and benefits as the common law.

The specific reasons in the literature are identified, and it was found that the reasons could be grouped into six main categories or types of reasons for a National Information Policy, namely economic, governmental, cultural, educational, developmental and technological reasons. The literature consulted discussing policy issues includes, Boon (1992:3), Buchwald (1995:6), Cronin (1987:136), Datta and Balfour-Awuh (1988:209), Forje (1993:14), McClure (1996:214), Mchombu and Miti (1992:141), Onyango (1996:165), Roos (1998), Smith (1998:2), Srikantaiah and Dong (1997), Trauth (1986:42) and Zwangobani (1995). The discussion below reflects the six identified groups of reasons.

2.2.2 Economic reasons

Information is regarded as an important national resource that has value and provides employment. It is a commodity which is collected, interpreted, manipulated and traded with and should therefore be managed as such. Effective use of information can contribute to increased productivity, improved quality and accelerated innovation and product development.

Policies are needed to provide a balance between economic and social aims. A National Information Policy providing guidelines for the redistribution of information would help reduce the gap between the information rich and information poor.

The use of information is integral to the decision making process. Information is needed for finding out the areas which are economically stagnating, comparing and contrasting the performance of different sectors of the economy, and identifying the fields which are likely to yield the largest dividends at the fastest pace.

A National Information Policy defines public and private sector relationships and opens up the market for creation and strengthening of the private information sector, and lastly it redefines telecommunication policies to brake monopoly. Information is capable of building partnerships between the public sector, local communities, Non-Government Organisations (NGO) in the country and international organisations.

2.2.3 Governmental reasons

National Information Policies are necessary since it is the practice of governments to allocate resources on the basis of principles, guidelines and directions as set out in policies.

There is a need for centralised government information resources and knowledge of hardware and software to permit sharing of data over networks.

Policies improve institutional accountability by defining institutional responsibilities and spearheading change by creating supportive conditions for co-ordinated donor support.

It is believed that "participatory democracy" can only thrive on an informed citizenry. An informed citizenry or electorate requires proper and organised information to enable it to understand issues involved in national development.

Less Developed Countries need to initiate a constructive dialogue with the developed world about the Global Information Society, and must play an active role in shaping its norms, standards, policies and regulatory frameworks. A cohesive information policy

would thus strengthen a country's position when negotiating policies in the international arena.

A National Information Policy would convey a "sense of national purpose" that would integrate local, regional and national government information and maintain policy jurisdiction over government and relevant non-government information.

There is inadequate availability and use of information in public administration and economic planning, implementation and monitoring. A need to follow-up and monitor the structural adjustment and readjustment processes initiated is required.

Availability and information deployment as demonstrated by the media, and unrestricted public access to information affects the very manner in which an individual and society at large make political, economic and social choices, which has a positive impact on the development of democracy.

There is also a need for a policy to guarantee citizens full access to publicly funded information. African countries need to establish such policies to enable them to overcome fundamental information problems through adequate inputs of information, infrastructural and other relevant requirements that ensure improved performance.

2.2.4 Cultural reasons

Developing countries have a long tradition of oral culture, and thus a low literacy rate. Telecommunications still remains a major issue and appropriate technology infrastructure should be made available. Because of low literacy rates investment in the area of the Internet is not sufficient.

Most African countries are relatively new nation states and the countries have been confronted with the problems of meeting rising expectations engineered by the belief that political independence meant the end of their misery. Africa's problems have also been

blamed on corruption stemming from excessive state control and state monopolies, as well as poor management of government institutions and misguided economic practices.

Colonialism has created economic, political and linguistic barriers to national and inter-regional co-operation. Thus the ability of most decision-makers to assimilate and apply information lags behind the available opportunities.

Nations often begin to focus on information issues by organising and preserving the information closest to them, namely their own history and cultural heritage. This is usually done by means of library and archival policies.

2.2.5 Educational reasons

Education is the one activity in which the eminence and role of information is rarely questioned. Information is needed to serve the educational system of a country to assist with formal, informal, adult, continuing and specialised training. The education system produces awareness of the value of information and the capability to use information effectively. The effective use of information enhances knowledge and is the key to the development of human resources. Therefore, information delivery in the education and training arenas has become an imperative for success.

Telematic education with the use of television and Internet is another important reason for having a National Information Policy since it provides the guidelines for communicating over long distances with learners. ..

Libraries have generally been acknowledged as educational institutions and policies and frameworks thus developed lay the foundation for National Information Policies. Libraries are also involved in adult learning or lifelong learning.

Libraries should also be the focal point for information dissemination to the community, since they provide information for nation building, and a competitive economy.

Science and technology play a vital role in research and development in any society. There is a need to train information professionals to support information infrastructure and information management.

2.2.6 Developmental reasons

Both the understanding of African development problems and implementing solutions, require substantial amounts of information input. Information has some contribution to make at practically every stage of the development process. The main objective of a National Information Policy is to cost-effectively acquire and optimally use information to process it as an integral factor in all sectors of national development.

There is a positive relationship between information and development. When people become aware of the role information plays in society through education, they realise its positive influences by increased quality of life.

The information required is directly dependent on the needs people have, the level of information literacy as well as individual variables such as available time and accessibility to information. A developing community's information needs are on the lowest level. In other words they need basic survival information. Sectoral development strategies in areas of trade, industrialisation, transport and communications and natural resources exploitation require emphasis, however agriculture is the cornerstone of African economies therefore there is a need for agricultural information.

According to Boon (1991:9) the type of information does not determine the type of information infrastructure, but information infrastructures are dependent on the technological development level of that community.

2.2.7 Technological reasons

The pace of development of Information and Communications Technologies is a major reason for the fast rate at which change in the environment takes place. Information affects

the deployment, use and application of information technologies, and changes in technology not only change the policy but also the assumptions underlying the existing policy. As information policies can quickly become obsolete there is a need to continually review them.

It is also desirable to be able to measure how effective existing policies have been. So far measurement and assessment of information resources are inadequate. New standardised methods are required for information to be measured as an economic resource and for the proper understanding of information as a productive sector of the economy.

Technological infrastructure and policies are needed to perform information functions (collection, processing and dissemination). For example the Internet can be harnessed to attend to the problems of collecting, processing and delivering information. The Internet can also assist development as follows:

- Assessing the information capacity of the country and determining user needs, organising information, synthesising information and providing an open access to internal information as well as external information.

- Disseminating information to meet the needs of the private sector and public sector including the daily information needs to meet the needs of the general public.

- Assisting in the exchange of information at various levels

- Lobbying for more government support and budget allocation.

- Mobilising support among the specialised ministries, universities and industries to produce information and manage information.

- By influencing policy makers and information purveyors to promote the use of the Internet for the country's development.

2.2.8 Summary

In general most draft National Information Policies mention co-ordination as a desired result of policy, in other words the proper management of information as a national resource. Information policies are also justified for the reasons of free flow of information,

international co-operation, and peace. It may also be seen as a "meta" policy in that it affects all other policy systems.

Finally, a national set of information policies is necessary since,

- It has a profound impact on the creation, production, collection, management, distribution, retrieval and access to both government and other information.

- Information is accessible to all therefore all should have fair and equitable access to the information. This means at all levels of government, including access to high-speed telecommunications networks such as government, and community information networks, providing non-commercial information and providing options for creating and sharing such information.

- Development of appropriate and complementary information policies.

- It governs or regulates how institutions, such as libraries manage, organise, retrieve and use information.

- It can create "advantages" and "disadvantages" for different types of individuals or commercial organisations in different settings.

Thus it can be stated that a National Information Policy is needed for strategic reasons to reach the aims of the country. It is also needed to support key functional decision making and problem solving in the country. This includes protecting privacy and confidentiality as well as copyright and trade secrets, yet allowing fair use of data for those that have the authority and restraint for that which may have a detrimental effect on the country. This may all be done through the technical and procedural enabler, telecommunications. According to *National Information Policies* (1989:5), "One of the two major causes of the generation of new information policies is the need to establish a reasonable and workable set of balances between gaining the maximum benefit from the rush of new information and telecommunication technologies and the avoidance of consequent disadvantaged groups of individuals, organisations or state interests. The other major cause is the changing role of the State and the extent of its involvement in or funding of certain activities"

Rapid advances in technology and telecommunications drive many of the issues. Policies are slow to catch up to these advances leaving individual rights unprotected, assurances of information dissemination unaddressed and documentation and preservation of the nation's history uncertain. Most of the issues discussed above can be effectively addressed by a National Information Policy. These reasons play a significant role and are intertwined with our everyday lives, so much so, that we are often unaware of them. Therefore naming them explicitly helps those in authority to see clearly the reasons for a National Information Policy, and what role it plays within the development of the country in all sectors of society.

2.3. Different philosophical approaches towards the formulation of a National Information Policy

2.3.1 Background

The understanding and formulation of a National Information Policy is normally based on a certain philosophy about how information policy development is approached by the national government. Various philosophical approaches towards the formulation of a policy may be followed, such as the "participant observation" approach suggested by Mncube (1996). Kajberg and Kristiansson (1996:7) briefly discuss seven approaches, but these are very vague and do not have a clear theoretical basis. Dedrick and Kraemer (1995:30) have suggested two approaches characterised by economic strategies, which are based on the nature and extent of government intervention. The distinction between these two main approaches is however not absolute, but rather a matter of degree. Thus a further eight scenarios of information policy development options dependent on the levels of involvement of public institutions in their roles as consultants, regulators and users, and how this is perceived and reacted to by the private sector as discussed by Angelides and Agius (2000) are adopted.

2.3.2 The Free-market approach

The government's role is limited mainly to regulating the private sector to achieve social goals such as pollution control or equal opportunity, and to providing public goods such as education and infrastructure (Dedrick and Kraemer, 1995:32). In the market directed model it is believed that market forces can better allocate resources than politicians or bureaucrats, and that the government should concentrate on ensuring the smooth operation of capital, labour and product markets. The market-directed strategy treats the market as an alternative allocation mechanism to political processes and is based on the idea that the operation of the free market will lead to optimal resource allocation and result in the most desirable economic outcomes. In this approach, government promotion of particular policies can be seen as an attempt to subvert the functioning of the market place, thus this approach is marked by the absence of a centralised co-ordinated strategy. It is believed that market forces should determine where and how a policy is produced and used, and government should limit its role to the provision of public goods and extenuating market failures.

2.3.3 Government-regulated approach

A government-regulated or plan-directed strategy treats the market as a means to achieve government-determined ends. Thus the government-regulated approach is more amenable to government manipulation of market forces. Dedrick and Kraemer (1995:30) believe that the private sector tends to under-invest in high-cost, high-risk innovations and it is argued that government must act to support development, either through its own research or through subsidies to the private sector. Thus strong industry co-ordination and a plan-directed approach guide this view to policy development aimed primarily at economic and industrial development, with certain industries targeted for promotion. Plan directed strategies are based on the idea that the market is a tool for achieving economically and socially desirable objectives and that the government has a role in directing the market toward such objectives.

2.3.4 Eight derived approaches

As stated before, the distinction between a free-market approach and a government-regulated approach is not absolute, but rather a matter of degree. Thus depending on the levels of involvement of public institutions in their roles as consultants, regulators and users, and how this is perceived and reacted to by the private sector, Angelides and Agius (2000) identified the following eight scenarios,

1) "Dominance" (high consultation, high regulation and high use)

2) "Nanny" (high consultation, high regulation and low use)

3) "Laissez-faire" (high consultation, low regulation and high use)

4) "Host" (high consultation, low regulation and low use)

5) "Coercion" (low consultation, high regulation and high use)

6) "Laissez-passer" (low consultation, high regulation and low use)

7) "minimalism" (low consultation, low regulation and high use)

8) "Lacklustre" (low consultation, low regulation and low use)

Thus taking the first two approaches into consideration one of the above eight scenarios for public institution involvement in information policy development should be considered when developing a National Information Policy for a specific country. "Government is thus faced with walking the tightrope between intervention and abstention" Cronin (1987:136).

2.4. Principles of information policy

2.4.1 Background

For successful development to take place in a certain sector of the economy, principles are needed to form the foundation of a policy. Principles are statements of preferred direction or practice and they therefore guide decision-making activities such as policies and strategies. In the search for fundamental principles of information policy, the literature

presented various approaches towards the presentation of these principles. These approaches were divided into the following three types of principles, namely:

1) General information principles.

2) Specific policy principles.

3) Micro principles.

The underlying principles of a National Information Policy must stem from what one conceptualises information to be. Thus the broad general principles can be described as the fundamental principles of information itself, the basis of the policy. The specific principles are principles to be applied specifically for information policies. The micro principles are principles specifically for the so-called programme level where implementation takes place. They are principles which, are more specific and state precisely what needs to be done in order to follow through with the policy. In order to present fundamental or *maximus* principles, on which a National Information Policy can be based however, it is important to scrutinise each of these approaches. The resulting *maximus* principles are a summary of these principles which can be used to identify specific elements that are relevant for a specific National Information Policy. The discussion of principles below is thus divided into the three types of principles as outlined above.

2.4.2 General information principles

Information principles must be deduced from what one regards as information and its central problem areas. This in itself may be problematic, as there is no accepted definition of the term information. For the purposes of this discussion the clarification of the term "information" in chapter one, is used as a basis.

The following general principles of information, on which an information policy must be built, according to Marchand and Horton (1986:196), and Britz and Schoeman (1997) are:

- Information is an economic resource and is therefore not free.
- This also implies that there must be manager and user accountability for efficient and effective utilisation of information resources.

- Possession of collective information is not a right but a privilege, and a necessity for the enhancement of productivity in a country. It is therefore seen as custodial ownership and must be shared with one another.

- Confidentiality: people have a right to privacy for personal and private information. Thus measures must be taken to protect the deliberate disclosure or misuse of personal files and other private information.

- Security and confidentiality of strategic information (e.g. military and trade secrets) and centres of information must be employed to safeguard them.

- Certain categories of information are instrumental to the exercising of basic human rights - people (nationals) therefore have the right of access to this information.

- Information must be protected from malicious and unauthorised use and change.

- Creators of intellectual products have the right of ownership.

2.4.3 Specific information policy principles

The principles to be discussed here are specifically for information policies, be they national (government policies) or organisation policies. However the scope of information policies is ever broadening, especially in terms of the so-called Information Society, thus the other sectors with a direct influence on National Information Policy, such as information communication technologies, must also be considered. The following specific principles are thus identified from the literature:

- The central government should be run as a government enterprise or business. Therefore since information is an economic resource it needs to be managed as such and the following information management principles as discussed by De Bruin (1990:18) apply:
  - o Integrated information sources form part of the basic foundation of democracy by integrating the support from the public and the private sectors. The first objective of information management is thus the integration of internal physical and intellectual information sources in order to make it effective and efficient so as to support the work of the organisation.

o Standards for information access and dissemination filter the knowledge base for relevancy and usability through compatibility of access, quality and accuracy. The second objective thus is to filter the external knowledge base to let only relevant and usable information through, on time and at the right place with the aim of supporting productivity.

The Special Libraries Association (SLA) of America, provides the following principles specifically for national and federal government information in the United States of America (USA), which can be compared to South Africa's national and provincial government (Bender, Kadec and Morton, 1991). National principles include:

- Information is a basic foundation of democracy and must be supported by all public and private sector organisations and individuals.
- The nation must develop and maintain a communications infrastructure that supports the free flow of information to all citizens.
- Standards for information access and dissemination are encouraged to ensure compatibility and access, quality and accuracy.

The principles suggested by the Special Libraries Association at federal government level are:

- Government information must be accessible to ensure accountability to its citizens.
- Government is responsible for providing its information, regardless of format to its citizens.
- Government information is the result of a participatory process and is a shared responsibility.
- Government has the responsibility to announce the existence and availability of its information and its new information systems and publications.
- Access to government information from a diversity of sources is essential.
- Government information must be of high quality and accurate.
- Government must ensure privacy of the personal information it collects.

- Access to government information may not be restricted by copyright or agency determinations.

- Monopolies of public information should be prohibited.

- Government information must be preserved for future generations.

- Information is a national resource to be developed, shared and protected.

Within the so-called Information Society, much importance is put into the role that communications technology plays, and the following three principles specifically in the field of information communications technology policy apply.

1. There is a link between investment in information communications technology and socio-economic development.

2. Information communications technology can play a catalysing role in the functioning of all economic and social sectors.

3. Cutting edge communications technologies is a precondition for competitiveness in the global economy.

2.4.4 Micro principles

The micro principles are principles specifically for the so-called grassroots level or for a specific programme. These principles are very specific and state precisely what needs to be done in order to follow through with the implementation of the policy and are best explained by means of an example.

Take for example the fact that establishing any new structures within communities, especially in South Africa, is a long and difficult process. The principles identified by Butcher (1998) on which new community structures in South Africa must be based, can thus only be applied in South Africa. These principles are:

- The establishment of any new structures must begin with a thorough needs or function analysis, which can identify other possible needs or functions for the structure in the community.

- This needs or function analysis must be accompanied by a flexible in-depth process analysis.

- All analyses will have to involve all of the relevant community players.

- Identifying the right people within the community with whom to negotiate is of critical importance.

- When planning new community structures a dynamic list of options should be available instead of "models".

- Strategies for social, economic, biophysical and technical sustainability of the community structure are paramount and will need to be developed from the outset.

- Success and sustainability of the initiative relies on identifying the correct location based on accessibility and convenience.

- Clear management responsibility and the development of thorough and effective administrative structures will be necessary.

- The infrastructure developed should be designed in a way that allows flexibility of options for its future use.

- The agency or agencies investigating the viability of establishing new community structures must be committed to delivery once engaged.

2.4.5 Compendium of information principles

The aim of the discussion is to present fundamental or a *maximus* of principles on which a National Information Policy can be based. In order to identify the *maximus* of principles, the principles as found in the literature are divided and presented above under the headings of general information principles, specific information policy principles and micro principles. Following now is a compendium of the pertinent principles grouped together under major issues necessary for a National Information Policy, from which the *maximus* of information principles will be deduced in the next section.

Information is an economic resource. This implies the following "sub principles".

- Information is a national resource. This means it is not free, it needs to be developed, shared and protected.

- Information must be managed just like other resources. This implies clear management responsibility and the development of thorough and effective administrative structures. This is not only necessary to ensure user accountability for the efficient and effective utilisation of information, but also the agency or agencies involved must be committed to delivery once engaged. This is achieved by the integration of internal physical and intellectual information sources, and by filtering the external knowledge base to let only relevant and usable information through on time and at the right place with the aim of supporting productivity.

Information infrastructure

- Information communications technologies play a catalysing role in the functioning of economic and social sectors, which is necessary for competitiveness in the global economy.

- The nation must develop and maintain a communications infrastructure that supports the free flow of information to all citizens. The infrastructure developed should be designed in a way that allows flexibility of options for its future use.

Rights of ownership

- Government information is the result of a participatory process. It is therefore seen as custodial ownership and must be shared. Therefore possession of such information is not a right but a privilege.

- Creators of intellectual products however have the right of ownership.

Privacy and confidentiality

- People have a right to privacy for personal and private information. Measures must thus be taken to protect the deliberate disclosure or misuse of personal files and other private information. Government must also ensure the privacy of the personal information it collects.

- Sensitive strategic information such as military or trade secrets must be confidential and certain security measures must be applied. After a specific period of time this sensitive information must be "declassified" and become accessible.

- All information must be protected from malicious and unauthorised use and change.

Democratic responsibilities

- Information is a basic foundation of democracy and must be supported by all public and private sector organisations and individuals. Government has the responsibility however to announce the existence and availability of its information and its new information systems and publications.

- Certain information is instrumental to the exercising of basic human rights - people (nationals) therefore have the right of access to this information.

- In a democratic process:
  o The establishment of any new structures must begin with a thorough needs or function analysis, and must be accompanied by a flexible in-depth process analysis. All analyses will have to involve all of the relevant community players. Thus identifying the right people within the community with whom to negotiate is of critical importance.
  o A dynamic list of options should be available for strategies of social, economic, biophysical and technical sustainability of the community structure and these will need to be developed from the outset.

Access and dissemination

- Standards for information access and dissemination are encouraged to ensure compatibility, access, quality and accuracy.

- In order to ensure accountability to its citizens, access to government information is essential. Government is responsible for providing its information from a diversity of sources regardless of format.

- Government information must thus be of high quality and accurate. Access to government information may also not be restricted by copyright.

- Government information must be preserved for future generations, however success and sustainability of the initiative relies on identifying the correct location based on accessibility and convenience.

2.4.6 *Maximus* of National Information Policy principles

It was found that all the types of principles are based on the general principles of information itself. Based on the above discussion the following *maximus* of principles for developing a National Information Policy can now be defined.

1) **Information is an economic resource.** It is therefore not free and must be managed just like other resources, implying clear committed management responsibility and user accountability for the efficient and effective utilisation thereof in order to improve productivity.

2) **Globalisation of Information Communications Technologies.** Technology plays a catalysing role necessary for competitiveness in the global economy. This implies allocation of national resources for the development and maintenance of a flexible communications infrastructure that supports the free flow of information to all citizens.

3) **Rights of ownership.** Personal authors own their own works whereas government information is seen as custodial ownership.

4) **Privacy and confidentiality.** People have a right to privacy of personal and private information as well as corporate confidentiality and security of strategic information. This must be weighed up against the protection of information from malicious and unauthorised use and change.

5) **Information (access) is a basic foundation of democracy.** Information resources should be deployed to support democracy. Certain information is instrumental to the exercising of basic human rights therefore people should have the right of access to this information. Government is responsible for announcing the existence and availability of its information. Better access to government-related information as part of the constitutional requirements leads to better decision making through timeous

access to accurate information which in turn leads to improved efficiency, productivity and effectiveness.

6) **Standards for information access and dissemination are encouraged to ensure compatibility, access, quality and accuracy.** Government is responsible for providing accurate and quality information regardless of source and format. The government should establish a central repository where current, consistent and co-ordinated, core data and metadata would be available.

2.5. Issues that need to be addressed

2.5.1 Background

The information sector is undoubtedly the most rapidly growing domain of human endeavour. A major problem in the formulation of a National Information Policy is that there is a problem with the conventional interpretation or perception of the scope. The scope of a National Information Policy describes the range of issues that are to be included, which is determined by existing definitions of information. For example where there is awareness, information policies may focus on trade, international relations, national security and on export of technologies. Thus at the one end a National Information Policy would include the dissemination of numeric data, at the other end would be libel laws, policies on commercial advertising and freedom of speech. Public policies however tend to be defined by the problems and issues that the society faces at a particular point in time, thus historically, information policies tended to focus on specific issues on an *ad hoc* basis, resulting in the fragmentation of the policy-making process. The very problem of an information policy, according to Menou (1991:58), is precisely to make all the pieces of the mosaic fit together.

From the above discussion it can clearly be seen that there is a great deal of uncertainty in the National Information Policy field in terms of what the policy issues to be tackled by this policy are. The numerous examinations of policy issues undertaken by several authors

in the information policy field, (Bender, Kadec, and Morton, 1991:14; Boon, 1992:5; Carpinter, 1991:21; Cheveri and Trump, 1996:380; Cronin, 1987:133; Kisiedu, 1988:24; McClure, 1996:215; Mchombu and Miti, 1992:146, 161; Montviloff, 1990; Nusseir, 1996:67; Rehman, 1996:186-190; Rowlands, 1996; See, 1999; South Africa, 1991b:71; Stone, 1998:3; Wild and MnCube, 1996:187, and Zwangobani, 1988:158-159), reflect the need to delineate information policy issues in order for solutions to be found. The issues however are complex, inter-related and do not allow for easy analysis. Two proposed methods for analysing and categorising information issues were however found in the literature and will be briefly outlined under section 2.5.2 below.

To arrive at the suggested information policy issues for this study, the discussion below is structured into three parts. The first part enumerates the key information related issues as found in the literature (authors as above), in no particular priority or structure. In the second part the information-related policies that influence and overlap in some cases with a National Information Policy are discussed. Finally, the information related issues and policies are analysed and discussed according to a chosen method of analysis. The resultant structured discussion is thus an interpretation of the scope and pertinent issues, which a National Information Policy should address.

2.5.2 Two proposed methods for analysing and categorising issues

2.5.2.1 Moore (1996a)

An aim of a National Information Policy is to create or organise the new Information Society. In speaking of an Information Society we are implying that information is diffused throughout the social and economic system, and it is therefore very wide-ranging. An information policy framework is therefore considerable. Initially information policies were concerned with building technological infrastructures such as telecommunications networks, now the attention or focus is on policies that will stimulate supply and demand of information. The pressures for policy creation are no longer on the creation and use of network capacity but cover fair competition and adherence to principles of universal

service or open access. Policies are thus very wide-ranging and Moore (1996a) has therefore identified three levels on which policy must be contended with, namely:

1. The industrial level.
2. The organisational level.
3. The social level.

1) The **industrial level**. First, information needs to be supplied within the system, meaning that policies are concerned with the development of the information content industries which are concerned with the shape of development of the information services sector by creating and developing information products and bringing these to the market.

2) The **organisational level**. The next area that needs to be covered by information policies is the use of information by organisations. These policies influence the way that information is used within organisations, the intention being to encourage the use of information as a resource in order to improve productivity and organisational effectiveness.

3) The **social level**. The increasing complexity of the Information Society means that people need information to enable them to take advantage of the opportunities that are available. Policy issues are concerned with the ways in which information is used by people as part of their everyday lives. People need information in order to exercise their rights, they need information if they are to take control over their personal well being and Information Societies also offer increased opportunities for continuing education and for constructive leisure.

Furthermore at each of the three levels Moore (1996a) has identified four elements that the policies need to deal with:

- **Information technology**. Appropriate technology must be available for the efficient functioning of the information industry. This also implies that organisations need access to the most up-to-date technology available. Access to

information on the social level by the public creates a need for technological solutions.

- **Information markets**. This concerns the exchange or commercial trading of information in conventional markets with the goal being to make these markets operate more effectively. On the social level issues concern the provision and exchange of information that is free at the point of use, this also raises issues of impartiality, objectivity and universal access.

- **Human resources**. This concerns the recruitment of suitably skilled and qualified people. Information organisations generate a demand for new types of skills and competencies, resulting in the need for training and re-training. At the social level people need to have a basic level of information-handling ability.

- **Legislation and regulation**. It is necessary to develop a legislative and regulatory framework that will enable an Information Society to function effectively. This may mean deregulation in order to open up markets or a pressing need for legislation such as to protect intellectual property.

According to Moore (1996a), by combining the levels and the elements it is possible to create a matrix which can be used to identify the need for, and the scope, of information policy, and it is also possible to specify the inter-relationships between the different policy issues.

THE INFORMATION POLICY MATRIX

	Industrial	Organisational	Social
Information technology			
Information markets			
Human resources			
Legislation and regulation			

Figure 2.1 Moore's (1996a) proposed information policy matrix

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2.5.2.2 Rowlands (1998)

The second method of analysis, by Rowlands (1998: 232), presents the fragmented, overlapping and sometimes contradictory nature of information policy issues by means of a two-dimensional map. Rowlands (1998) identified 24 information policy concepts, which he related one to another on the two-dimensional map. The concepts were identified using a specialised encyclopaedia entry on information policy, and were then used as search terms in the Social Sciences Citation Index. Rowlands (1998:233) states that it is reasonable to suppose that concepts, which are closely related, will tend to occur together more frequently than concepts, which are not connected. From this analysis then it was possible to display these relationships on a two-dimensional map, and by using statistical techniques the concept terms were clustered into five smaller groupings of related concepts or sub-domains of the field of information policy.
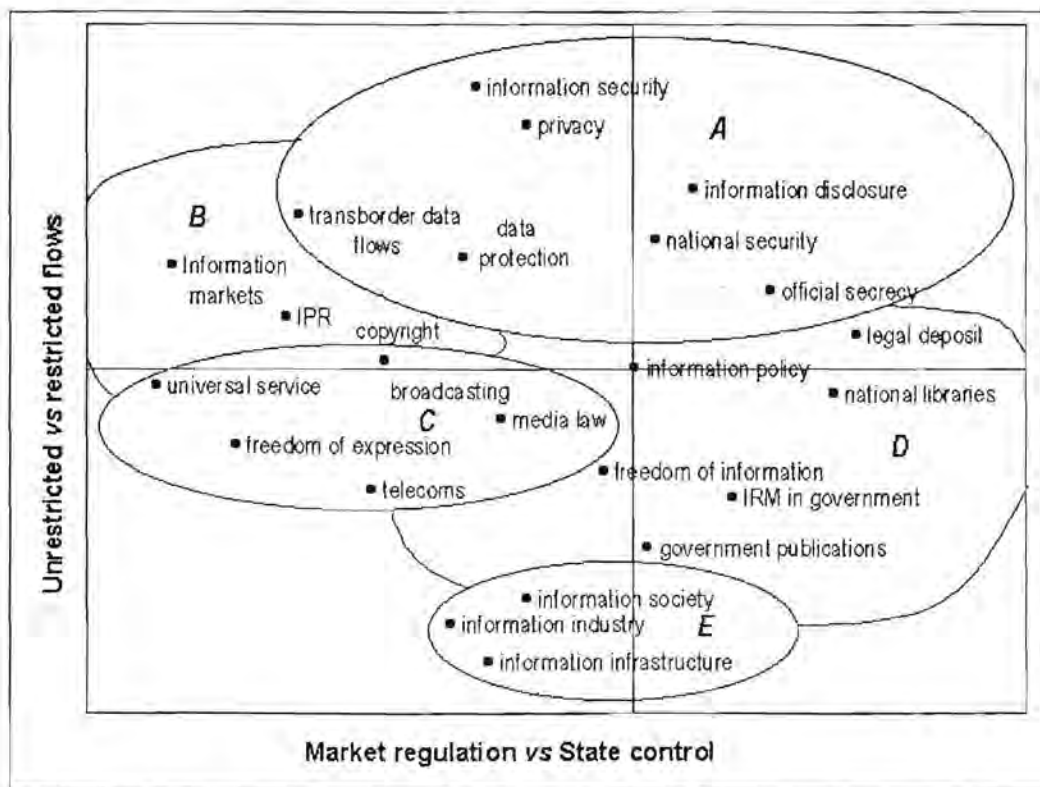

Figure 2.2 Rowlands' (1998) proposed concept map of the field of information policy

The five policy sub-domains identified from this map are:

A. **Information protectionism**. Regulations and mechanisms controlling information access and disclosure in the public sphere (for example official secrecy) and in information markets (for example data protection).

B. **Information markets**. Laws and regulations, which protect investment in the creation of information content (for example copyright) and enable market exchange to take place.

C. **Broadcasting and telecommunications**. Public policies, which regulate the mass media and communications, balancing commercial and citizen interests (for example universal access).

D. **Public access to official information**. Policies and regulations, which frame citizens' access to information held within government (for example freedom of information).

E. **Information Society and infrastructure**. Public policy measures to invest (or encourage private sector investment) in the information infrastructure, broadly defined.

Rowlands (1998:235) then shifts his attention from the composition of the clusters to the nature of the axes, which define the mapping space. The concepts lying to the right of the origin relate to the direct management of the State of its own internal information resources. From the top down, these responsibilities extend from the control of sensitive official information, through the effective storage and management of official information to the provision of infrastructures for its wider dissemination. Concepts on the left-hand side of the map seem to match the State's indirect role as a regulator of private sector activities. The State can be seen acting from top to bottom, first to constrict information flows, for example personal privacy, then creating the conditions within which market exchange can take place, and finally guaranteeing fundamental rights of freedom of expression and universal service. The spectrum of the map can thus be summarised as follows: the y dimension expresses the dimension between unrestricted, open and restricted or controlled information flows. The x dimension indicates the two distinct

information policy roles of the state as a regulator of information markets, and as a major gatherer and disseminator of information itself.

2.5.2.3 Choice of approach

When deciding which issues are to be addressed by a National Information Policy, Rowlands' (1998) model helps one to think first and foremost about the values, rather than the specific laws and regulations that underpin the conceptions of information policy. It illustrates how political values and ideologies are fundamental to the way that information policy problems are perceived, and how problems may be represented differently by various stakeholders. Thus the identification of concepts is subjective, and only concepts that occurred jointly in a database search were identified, in addition, the terms identified needed to be extended to include more contemporary terms. This approach may perhaps be better applied to create an overall picture of National Information Policy and its inter-related concepts, issues and policies.

In contrast Moore's (1996a) approach is more specific in terms of specifically identifying every possible issue and placing or categorising them in relation to one another on a matrix. Thus this approach is more structured, systematic, comprehensive and thorough, looking at all angles or levels and possible interactions. The information issues identified in part three of the discussion below are thus structured according to Moore's (1996a) model. Information policy, like all aspects of public policy is embedded in a political and social context, thus no researcher on the topic of information policy can be totally objective and free of assumptions, prejudices or vested interest. Issue identification and problem definition in information policy are therefore not value-free. The structured discussion of the scope and pertinent issues is thus an interpretation of what a National Information Policy should address. The issues identified are by no means the ultimate and final issues and serve only as a guideline for this study.

2.5.3 Information related issues that need to be addressed

The information-related issues as found in the information literature have been synthesised and are recounted here in no particular order. The key issues identified below were taken

from the following publications, Bender, Kadec and Morton (1991:14); Boon (1992:5); Carpinter (1991:21); Cheveri and Trump (1996:380); Cronin (1987:133); Kisiedu (1988:24); McClure (1996:215); Mchombu and Miti (1992:146, 161); Montviloff (1990); Nusseir (1996:67); Oppenheim, (1996:415-420); Rehman (1996:186-190); Rowlands (1996); See (1999); South Africa (1991b:71); Stone (1998); Wild and MnCube (1996:187), and Zwangobani (1988:158-159).

Governments are encouraged to develop direct citizen participation by using new technologies. The possibility of linking the population to communication networks for the purposes of electronic democracy is however both a threat and an opportunity. It involves the government's role regarding a legislative and regulatory framework which provides the "security" relevant to the needs of industry on, for example how to enforce laws. The law on liability for information provision and who owns government information also needs to be reassessed, with content regulation being self-regulatory.

The information market is global. There is a need to know how it works in order to create a balance between supply and demand economics. The services sector requires reliable and up-to-date marketing related information, such as trends in consumer demand and behaviour. Consumers on the other hand need information on available products.

International collaboration is essential to research and academic communities. A trade policy is therefore needed for transborder data flow and governments must work together to encourage equitable trading partnerships, external co-operation as well as regional and international exchange.

In the electronic age, the legal framework covering the protection of intellectual property rights must be extended to apply to all media and types of intellectual works, in other words all media must be treated the same. Copyright law needs to be reviewed to ensure that it is up to date, clear and unambiguous, takes due regard of international

developments, and balances the needs of creators, copyright owners and users of copyright material. Specific copyright issues include:

- Status of transmission through networks.
- Digital use of author's works.
- Clarify "fair dealing" in machine-readable data.

The development of electronic commerce creates cryptographic issues, since information in electronic transactions needs to be secured. Issues regarding security of cash transactions, authentication of the identities of those who receive and deliver messages and security of transmissions between different sites requires international agreement on standards and regulations. Increased information penetration also requires protection of personal data, privacy and security. Government must clarify its policy on the balance between crime prevention and detection and the needs of individuals and business to privacy of communication and of protection of their intellectual property.

Preservation, archives and records management requires standards for computer records. Consideration for archiving should be built into information systems design. There is also a need to rethink regulations governing the retention of archives and organisational records. Legal deposit of machine-readable materials also requires safeguards regarding the copying of such material. Additional problems include the issue of where the deposited material can be placed for inspection, and the problem of obsolete hardware and software.

Infrastructure issues include information, communication and service networks as well as the policies that govern them. Exploitation of infrastructure raises issues of electronic commerce, standards, privacy, provision of universal access, education and training, regulatory issues and encouraging technological developments. When developing national information services and systems, it must be ensured that they are user friendly, standardised and compatible to ensure that information is easily accessible and usable. Providing high-speed access to schools and colleges presents an opportunity for novel teaching and learning within schools and colleges.

A telecommunication policy must provide availability and affordability to basic data and information services. It is required for effective penetration of high quality telecommunication services, broadband and mobile telephony and also to deal with the issue of universal access. A broadcasting policy and licensing is also needed to ensure that objective information from independent sources is readily available.

For people to participate in democratic processes, legal rights to information (access) must be established. It is the public service providers' duty to develop a consistent approach about what information belongs in the public domain and by what means it should be delivered. According to Oppenheim (1996:415-420), a major principle of freedom of information must be that all information created by government shall have no copyright associated with it and anyone shall have the right to inspect at no charge and to copy such information. The maximum possible charge should be marginal to cover the cost of delivery.

Information can be best utilised as an economic resource to promote national competitiveness, technology and the general welfare of a country through co-ordination and organisation of meagre resources at all levels of operation. In addition for a National Information Policy to play a role in national development implies amongst other issues that:

- The development of national information resources and services as an integral part of the national development plans be promoted.
- The generation of information at the national level be strengthened.
- Information handling technologies should be modernised.

Culture is expressed, communicated and handed down through information. Information and the technology used to disseminate it worldwide has broken down differences and life-styles, fostered a global economy and led to the dissolution of cultural identity and governments.

Most people are under the misconstrued notion that information technology is an all-in-one solution, forgetting that it is merely an enabling tool. Thus substantive informational inputs, regular updates and appropriate maintenance of related software and hardware are neglected. Skills requirements are also changing constantly and there is a need to identify shortages of skills, which in turn requires appropriate curriculum development and retraining. Changes in the work environment implies that the following take place:

- A team approach to information resource management.
- Fostering a learning, teaching, management and service oriented work environment.
- Creating an open environment where all people can participate in consensus building.
- A rethinking of information services to include concepts of participatory management by the user community.
- A need for a shift in attitudes towards information.

To sum up, Montviloff's (1990) examples of main policy issues can serve as a summary of the issues identified above. These are issues dealing with,

- The role of information in national development.
- The development of national information resources.
- The development of national information services and systems.
- The organisation of information activities.
- Access to information.
- The development of information skilled human resources.
- The use of information.
- Participation in international information programmes and services.

2.5.4 Information related policies and other issues that influence and overlap with a National Information Policy

Existing constitutional acts, policies and legislation of various kinds relating in varying degrees to the provision of information prevail and cover some of the information-related issues. Interconnection and interoperability with other policy areas is one aim of a National Information Policy, thus the information-related policies must be considered. However it should also be noted that the emergence and convergence of information and communication technologies are at the centre of global social and economic transformations. Technological components, which used to be accounted as separate activities, have converged to characterise all aspects of information communication technologies. The new information communication technology sector is thus described as a gamut of industries and service activities, including Internet service provision, telecommunications equipment and services, information technology equipment and services, media and broadcasting, libraries and documentation centres, commercial information providers, network-based information services and other related information and communication activities.

The discussion of the information related policies is arranged according to those policies that have to do with the physical infrastructure necessary and includes areas as found in the information lifecycle (generation, distribution, dissemination, and storage), and the legal infrastructure concerned with information. Information legal infrastructure involves a framework of laws setting up policy infrastructures. The most well-known law is that regarding intellectual property rights. The foundation for succeeding in the Information Society is acquiring an education and the information skills to acquire further knowledge for purposes of living in the Information Society. The educational system can both facilitate and enhance appreciation of the value of information by providing incentives to use it, and is thus also briefly discussed.

2.5.4.1 Information infrastructure

1) Information technology policy

The concept of information is closely linked to communication since information can be regarded as facts or opinions about the world, which can be communicated to others. Information technology according to Muller (1995:459) is any technology, which is used to collect, store, and process or communicate information. In other words an Information Technology Policy is different from a National Information Policy in that it concentrates purely on the technical side or hardware that may be used by a National Information Policy for communication and distribution purposes.

2) Science and technology policy

The core of a Science and Technology Policy is discoveries and applications. The first hand generation, by means of research and development, of new data which is analysed and interpreted to become information, must be protected. According to Motala (1995:65) the objective of science and technology policies is to enhance the chronological capability so as to advance industrial technological development.

3) Telecommunications policy

The privatisation of telecommunications leads to de- or re-regulation. It has been found by *Information policy* (1997:3) that in too many countries, telecommunications policies are hindering the development of advanced digital networks. Barriers include high fees, limited bandwidth, unreliable service and trade barriers on imported information technology. This in turn influences the infrastructure required to disseminate information and make it accessible to all.

4) Transborder data flow

The linking of telecommunications and computing technologies permits the instantaneous transfer of enormous quantities of information across great distances. Transborder data flow involves the exchange of information across international borders. As information becomes an increasingly valuable resource and a significant commodity, access to it

becomes an issue of greater concern in both local and international contexts. Thus dissemination and access of information across borders is influential on a National Information Policy.

5) Standards

All competitive interactions between a company and the outside world affect the competitive edge of that company. For example the incompatibility of computers and/ or vendor protocols retards the growth of computer communication services. Another example is the computer hardware company International Business Machines (IBM) versus Apple McIntosh, each company has unique user protocols for its system. The solution lies in international standards organisations promoting the creation of standards in the marketplace, but the level of government involvement must also be kept in mind. There is a view that standardisation is seen as a technical rather than a policy-related process and thus National Information Policy documents seldom refer to it. In fact standards influence especially the access and distribution to infrastructures of information. The need for standardisation grows proportionally with the informatisation of society.

6) Mass communication

Media included here are radio, television, newspapers and advertising of any sort in various media. The important role to be played by media is to make information freely available to people at grass roots level. The relationship between the state and media is always delicate. Media should remain national without being a propaganda instrument, and it should obtain free access to a variety of sources. Censorship plays a role here as well as freedom of expression. It is a medium for advertising and education, however product advertising is almost entirely concerned with promoting images, which are only related to that product. Advertising with misinformation is propaganda. It is normally associated with politics but there are also many situations where a vested interest in one particular outcome means that the even-handedness of the work can be questioned. The full range of possibilities is not revealed and the complete evidence for and against is not given a fair hearing.

2.5.4.2 Information legal infrastructure

1) Intellectual property

Intellectual property refers to the products of people's thoughts. These have value, as property, to the people or organisations that produced them. Economic returns are often attached to it, therefore its use and accessibility are traded in and controlled. The right to control may be bought or sold or inherited or rented out just as for any other form of property. Information is not tied to a physical carrier, it can be moved around at will and made into as many copies as required, all without changing or affecting the original. Strictly speaking it is exploitation rights, not information that is valuable. Thus intellectual property rights protect information that is generated. Protection of intellectual property is a concern that is not confined to the private sector, there are times when the state may consider it desirable to resist access to information that has commercial application and has been produced by publicly funded organisations.

The two chief types of intellectual property rights policies are:

a) **Copyright.** Copyright promotes access to information by supporting its profitable production and distribution, and by balancing the property rights of the copyright holder with the public's interest in access to information. It is an important incentive for production of information goods. The property is in the idea expressed in a certain way. The author's first right is the right to protect the use of the author's own creation. The second is a right of protection for investment into converting the author's output into a saleable product. Property also relates to design of something useful that will be either mass-produced or at least produced in multiple copies. Examples are the carvings of Chippendale. These intellectual rights cover the shape, decoration and appearance of objects, as these are not dictated by function.

b) **Patents.** According to Carpinter (1991:29) patents exist as a result of government policy directed at encouraging research and development, innovation and invention. Patents confer on the inventor of original information with a commercial application, a property right to that specific application for a period of time. Information is not protected from dissemination but rather from application and it is made publicly

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available as part of patent requirements, thus promoting access. The central part of a patent system is a bargain between an individual inventor and the state. The inventor has to make a new and useful invention, he/she is then allowed to develop and market the product within the protection of a limited time monopoly to make, use or sell it. In return, the inventor has to deposit in a public place a description of the invention in such detail that experts in that particular field could reproduce the process or product.

2) Legal legislation

The seven main types of legal legislation are discussed.

a) **Breach of confidence**. The success of many activities depends on access to relevant, timely and reliable information. Publishing a research paper or attendance at a conference or trade fair are particularly good ways of exchanging information. However any contacts between a company and outsiders may reveal commercial secrets and have therefore to be vetted. This relates to the accessibility of information, especially that of a confidential nature. What is considered here is characterised by the relationships between parties, which primarily determine access and use of information. Its value is signalled by being disclosed to only a few people and in confidence.

b) **Industrial espionage**. This is breach of confidence without the confidential relationship. There is no relationship between the "owner" and the "taker". The law operates only where theft, misrepresentation, intimidation or the like can be shown.

c) **Legal liability**. Suppliers of information may be held legally liable for accuracy of information supplied and accuracy for searches and the competence of advice given. Carpinter (1991:48) states that if a person or organisation can be held liable for the quality of the goods or services they supply, there is an incentive for them to ensure that their product meets a reasonable standard. This in turn gives consumers confidence to make decisions based on that information.

d) **Freedom of information**. Freedom of information pertains to activities of companies or public sector bodies, and is a right of access to stored information. It usually refers

to public sector authorities, such as specific laws dealing with local council meetings and environmental pollution records.

e) **Privacy.** Privacy is a matter of protecting individual information held in personal files, such as personnel and medical reports and records. The private and public sectors gather all kinds of information about individuals in order to plan services and to operate and deliver them effectively. Stemming from this is a contrary need for privacy, for checks on accuracy and for some control over who has access to the information. A general right to privacy is a counterpart and balance to a general right to information. New technology poses a threat to the security of commercially sensitive information, thus privacy regulation concerns all the ways in which investigation can be intrusive as well as the holding and disclosure of data.

f) **Data protection.** Data protection is concerned mainly with personal data on computers. It allows files on individuals to be located, inspected and changed if necessary. It also prescribes that "members" should not send data to "non-members" which do not have equivalent levels of protection. Data protection can also be regarded as a human right similar to but separate from privacy.

g) **Secrecy.** There is usually quite strong secrecy legislation concerning both national security and technical information. Countries are particularly concerned about terrorism, drug smuggling, general crime and immigration.

3) National Library Acts

Libraries are seen as gateways to information serving mainly as places of access. The objectives of national library acts are to contribute to socio-economic, cultural, educational, scientific and innovative development by collecting, recording, preserving and making available the national documentary heritage and promoting an awareness and appreciation thereof by fostering information literacy. This vision has been broadened to include not only the documentary heritage, but all media such as film and electronic storage media. Libraries are thus seen as information centres for national development, as communication structures to prevent social isolation by establishing open national information networks, which will enable people to take advantage of the benefits of the

Information Society. They also play a role as partners in the process of standardisation. The challenge of national libraries is to respond to the rapid changes taking place in the environment in such a way that they will be visibly relevant to what is happening in it.

2.5.4.3 Education and level of information education

People need to be equipped to deal with information. Individuals may become vulnerable to manipulation or confused by the vast amount of information surrounding them if they do not have information skills. They will thus need to be literate and numerate, have the capacity to search for information to meet their needs, have critical thinking ability to filter the information found, have the ability to evaluate the relevance and reliability of information, to organise the information once they have it, and to be able to present it comprehensibly by means of oral and written communication. The formal education system can be a primary provider of these skills, but is not the only means of providing information education to people. Implementing life long learning programmes enabling employees to upgrade their skills is an economic investment, which will not only benefit employers, but will contribute to the collective well-being of the country. Specialist information workers such as Librarians may also educate people in information skills, and libraries themselves may be seen as communication and education structures and should therefore play an active role.

2.5.5 The main policy issues that need to be addressed by a National Information Policy

A National Information Policy should essentially cover the issues of the information life cycle. Taking the above discussions on information-related issues and information-related policies into consideration, what follows below is an own interpretation of issues that a National Information Policy should address. The identified issues have been analysed and structured according to Moore's (1996a) matrix, as discussed in 2.5.2.

Table 2.1 Policy issues that need to be addressed by a National Information Policy

THE INFORMATION POLICY MATRIX			
	Industrial	**Organisational**	**Social**
Information technology	Systems must be user friendly, standardised and compatible to ensure that information is easily accessible and usable. Data and information must be transformed into usable knowledge, which must be user friendly and relevant to its target population. Information must be provided in a timely fashion Utilise latest and appropriate technology to facilitate the processing, manipulation, storing and retrieval of information. Develop a system for information processing collaboration and inter-linking between NIP information resources and institutions.	Governments stimulate the development of local value-added information services. [1] Infrastructure issues include information, communication and service networks as well as the policies that govern them. Aspects of information infrastructure provision include basic telecommunications infrastructure and telematics services, management structures and regulatory frameworks. Information Technology as the panacea of information and knowledge gaps and problems.[2] Most people are under the misconstrued notion that IT is an all-in-one solution, forgetting that it is merely an enabling tool.	Domestic exploitation of the economic opportunities of the information infrastructure. [3]

THE INFORMATION POLICY MATRIX

	Industrial	Organisational	Social
Information markets	The information services sector requires reliable and up-to-date market information on trends in consumer demand and behaviour. In order to provide information at the point of use and make use of conventional market mechanisms, the way the information market works must be understood.	Organisations require market information about export opportunities to justify large investment costs, and potential for expansion and where and why products fail. The effect of changes in social habits and consumption patterns have affected and been affected by the information market. Develop simpler products with easier training for new users. Policies to expand markets in order to reduce costs of information products. The market for information is global, with markets in the East growing rapidly. Efficient use of information in business and commercial sectors can lead to increased productivity. Information can extend market penetration, lead to new products and add higher value to products and services. Also leads to the development of systems and procedures, e.g. to make it easy to buy information from networks. Which government publications should continue to be issued in hardcopy, and which in soft copy in the context of their timeliness, time-sensitive nature and their archival value, influence the information market. The issue of authentic and legal versions of government documents in electronic formats. Establish a basic level of information resources to which the individual has a "guaranteed" right.	Consumers need information about services that are on offer, including new local providers being established, evaluations and consumer tests to exercise choice in an informed way. Some social information can be provided through conventional markets using the price system to achieve balance between supply and demand.

THE INFORMATION POLICY MATRIX			
	Industrial	**Organisational**	**Social**
Human resources	Shortages of skills holds up the development of new products, therefore changing skills requirements must be monitored to identify shortages of skills in areas and communicate this to education and training facilities. This influences the National employment policy. Need for policies to support appropriate curriculum development.	Without appropriately educated and trained staff there will be loss of quality. Consider the role and skill requirements of intermediaries and information brokers, in terms of educational requirements. Speed of change requires need for constant retraining. Technology offers the potential for developing new forms of work. Organisations need to consider the implications for skill requirements, and the impact on personal and community relations. In the work environment, there is a need for people who can process large amounts of information, adding value by synthesising and simplifying it. Changes in the work environment imply other changes such as different management strategies. There is need for a shift in attitudes towards information among the providers of goods and services.	To improve information handling skills as society becomes more information intensive, focus is placed on critical-thinking skills.[4] Education and training issues encompass the definition of approaches to education and training in a world where the impact of ICT's has altered many of the traditional signposts of the profession. There is a need for a workforce capable of adapting to the new generation of tools. Social problems need to be overcome so that people can help others to use information. Education at all levels needs to be improved and supplemented by work-related skills. Human resource programmes, especially education, training and research and development programmes, must be consistent with the current information environment.

THE INFORMATION POLICY MATRIX

	Industrial	Organisational	Social
Legislation and regulation	Industry depends on the security provided by the legislative and regulatory system. Legal issues concern policies on how to enforce laws, which in turn leads to questions of harmonising policies and practices internationally. Issue of centralised versus decentralised governance influences policy. Policy formulation must be directed at establishing ground rules for who, why, when and how of public and private sector involvement with information. Legislation must be under constant revision to accommodate changing requirements. A trade policy is needed for Transborder data flow to encourage equitable trading partnerships.[5] Governments are to work together to develop a set of integrated policies to ensure the creation of information and communication sectors in the nation for external co-operation as well as regional and international exchange. Ownership rights of information by government [6]regarding, science and technological information, and the issue of uncopyrightable information. In the electronic age, the legal framework covering the protection of intellectual property rights[7] must apply to all types of intellectual works. Liability for information provision. Who owns government information, government, taxpayers or the contractors who collect the information? Universal access depends on the effective penetration of high quality telecommunication services, broadband and mobile telephony. Users must be able to afford it and it must be in useable formats. Equality of access is the basic principle in a democratic society.[8] Technology provides attractive solutions to information problems, but unless there is availability and affordability to basic data and information services nation-wide, erosion of equitable access is inevitable.	Need for legislation regarding the security of electronic transactions as a consequence of changes in data protection and privacy laws, to prevent fraud and protect commercial value. Increased penetration of information reinforces the need to protect personal data and provide privacy and security[9]. Preservation archives and records management. In the desire to digitise information and offer it electronically, there is a lapse in policies and procedures on their preservation and conservation. Concerns are due to the creation of historical information in electronic format and that historical documents will be lost[10]. Co-ordination [11]and organisation issues are the most effective means of maximising meagre resources at all levels of operation. Information searches must be conducted to avoid duplication of effort. A multi-faceted approach to information gathering and dissemination must be utilised. On-going summative evaluation of information deliverables must be conducted. Strategies to enhance the concept of information sharing must be encouraged.	There is a need for independent media control and ownership to ensure that objective information from independent sources is readily available. This implies a broadcasting policy and licensing. Freedom to publish or disseminate information, which complies with accepted obscenity, public decency, race relation, slander laws or may seem subversive or offensive against public order. Each country should take stock of existing policies and assess the current situation *vis a vis* achievables, to ensure that there are policies to define the framework, agenda and strategy that the country wants and can adopt. It should not be acceptable for legislators to pass laws that are unintelligible. People cannot exercise their rights and claim entitlements without information. Nor can they participate fully in the democratic processes, therefore legal rights to information (access) must be established. It is the public service providers' duty to provide information.[12] Information issues become most closely associated with political and cultural traditions, e.g. a culture of freedom to information versus a culture of official secrecy. A more consistent approach must be developed about what information belongs in the public domain and by what means it should be delivered. Safeguards against controls on access to information should be built and maintained, this includes the issues of sensitive but unclassified information and of restrictions to access. Government should convene groups to create an information "bill of rights".

Supplementary notes to some of the issues described in Table 2.1

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[1] Local value-added information services include information technology, libraries, documentation centres, information centres, archives, museums, publishing establishments, broadcasting services, national standards and statistical agencies and extension agencies.

[2] When regarding information technology as the panacea of information and knowledge gaps and problems, substantive informational inputs, regular updates and appropriate maintenance of related software and hardware are often neglected.

[3] This raises issues of electronic commerce, standards, privacy, provision for universal access, education and training, regulatory issues and encouraging technological developments.

[4] Critical-thinking skills such as the need to identify, select, acquire, analyse, synthesise, process and evaluate information and be able to do it more effectively. The result is a need for the substantial development of the basic education system.

[5] Transborder data flow raises further issues of:
- Loss of control of information.
- Dependency on technology and or information.
- Perceived impact of culture.

[6] Issues concerning the liability for Government information provision include:
- Access to government information and pricing thereof- it must be easy to pay for information.
- To what degree if at all should a government subsidise costs for providing access to government information?
- There are some types of information for which the government must assume sole responsibility because it is neutral, for example the national accounts.
- The law on legal liability for information services needs to be reassessed.
- Exploitation of public information assets by private sector.

[7] Intellectual property in the electronic age applies to all media, from printed publications to computer software and electronically distributed data and information. Further issues that will dominate policy-making regarding copyright include:
- The forms of information that copyright should properly protect.
- Whether and when new uses of copyright subject matter should come within copyright control.
- How the rights of copyright holders can and should be enforced in other countries.
- The rights creative individuals should have in an increasingly depersonalised environment.

[8] If technology remains outside the reach of minorities, it will create the potential for alienation and social division, leading to a gap between the information rich and

information poor, also the danger of an urban-rural divide is exacerbated. A commitment must be conveyed to the reduction or removal of economic, geographic, technological and other barriers, therefore:

- Public access arrangements, for example libraries, must be made.
- Access to information should be subsidised.
- Make universal provision, decide how it could be made and paid for.
- Information technology literacy and adequate information technology training and education are serious issues which must be addressed by governments.

[9] Privacy and security raises the question whether a personnel manager may be able to check whether someone has a criminal record or not.

[10] Concerns involving preservation, archives and records management of historical documents due to:

- The lack of standards for computer records. Consideration for archiving should be built into information systems design. The problem includes that IT storage formats are not standardised, and depend on the marketplace.
- The public should also have a right to ensure the accuracy of personal data held.
- Information on medical records is private.
- Legal deposit provisions have also to be considered and updated to include digital information.

[11] Co-ordination is an issue since services are usually spread amongst several authorities with little co-ordination and authorities tend to compete rather than co-operate with each other.

[12] Government should convene groups to create an information "bill of rights" to include and address:

- Diversity of sources.
- Constitutional rights.
- Individual privacy.
- National security concerns.
- Non-discrimination of users.
- Assurance of product quality, accuracy, completeness.

Moore (1996b) furthermore includes the following issues concerning cultural identity,

- Information is an important determinant of cultural identity. Culture is expressed, communicated and handed down through information.
- Information and the technology used to disseminate it worldwide has broken down the differences and life-styles, fostered a global economy and led to the dissolution of governments.
- Technology offers opportunity to give expression, and could provide a means of preserving and reinvigorating culture.

As these issues do not only apply to Europe, which is the context in which Moore (1996b) presents them, they have been included. For example within an African context the development and implementation of a National Information Policy is often justified on the grounds of the role it plays in national development. This can be interpreted as adding a cultural dimension to National Information Policy because in African Less Developed Countries issues often relate specifically to,

- The promotion of the development of national information resources and services as an integral part of the national development plan.
- The strengthening of the generation of information at national level.
- Advocating of the modernisation of information handling technologies.
- The establishment in each country of a national co-ordinating mechanism which will ensure effective co-ordination, implementation and operation of the policy.
- Establishment of appropriate legislators and their enforcement to facilitate access to information.
- Training and retraining of personnel for the efficient management of information resources.
- The promotion of effective use of information resources and services by the general public, policy makers, technology users and information professionals.
- Participation in relevant regional and international information systems.

2.6. Summary

Political, social and economic changes take place constantly on the world scene and influence the spread of information and information technology and nations' abilities to use them. Similarly the responsibility for addressing the issues rests with a wide range of different bodies. Information policies must thus address potential problems in the use of the electronic spectrum, competition in information products and services, and the impact of other countries' policies. Issues relating to copyright of software, liability in cases of false information in databases, regulation of the use of data transmission networks and standards and technical specifications for hardware and software compatibility are as important on the international scene as they are to the national debate.

This chapter has looked at the theory behind National Information Policy, examining the necessity of a National Information Policy from an economic, political, cultural, educational, developmental and technological viewpoint. The different philosophical approaches towards the formulation of National Information Policies were discussed. The principles on which a National Information Policy must rest were then identified and also discussed. The scope of a National Information Policy was considered by identifying the wide range of important policy issues and related policies. Many information-related policies influence the National Information Policy. Usually these policies are contradictory in nature, lack comprehensiveness and most important, there is usually a total absence of guiding policies in the critical areas of development. However, they may be seen to form an existing infrastructure, which should be considered.

In the next chapter the process by which a National Information Policy can be drawn up is examined, concluding with an own suggested methodology to be adopted before the traditional government policy formulation process is followed. The traditional government process involves the drawing up of draft discussion documents leading to a Green Paper and finally a White Paper which is laid before the parliament, prior to a formal policy being passed.

Chapter 3 The theoretical basis for the development of a National Information Policy for South Africa

3.1 Introduction

In the domain of science no constructive National Information Policy can be developed or implemented without a sound theoretical foundation. In the previous chapter a theoretical foundation for the study of National Information Policies was laid down. The chapter covered the reasons why a National Information Policy should be formulated and the philosophical approaches towards formulating a National Information Policy. Fundamental principles were identified and the issues that need to be addressed by a National Information Policy were listed. From the previous chapter it follows that information policy formulation considers information as a national resource that must be organised, managed and used effectively. Information serves as a tool for solving problems of a practical nature related to innovation and implementation of for example information technology or information intensive programmes. The development of an intelligence culture forms a corner stone in an information policy. The intention of this chapter is to study various methodological approaches used for developing a National Information Policy, focussing specifically on efforts made in South Africa. This discussion will lead to the identification of key role players in the process and ultimately propose an own approach towards the formulation of a National Information Policy in South Africa. It must be kept in mind that information is not an end in itself but a means to improve the capacity for participation in decision-making. There is also a need to ensure agreement about the real nature of the system under review, thus it is necessary to focus on the content- the information- rather than on the conduit- the technology- in the analysis and development of policy.

3.2 An overview of different proposals towards the formulation of a National Information Policy in South Africa

International Non-Government Organisations such as the IDRC and UNESCO have led the way in making proposals to be followed for the information policy formulation process. In the following pages an overview of three different proposals is given, namely the IDRC "*Africa Strategy*", UNESCO's handbook on the formulation of a National Information Policy, and because we are primarily concerned here with South Africa, the important progress made by the National Information Technology Forum. A background to each proposal is given, after which the main process or steps are discussed. Based on the short discussion, critical comments about each proposal are made.

3.2.1 Canadian International Development Research Centre (IDRC) proposal for an information policy.

3.2.1.1 Background

The IDRC has been supporting activities related to the provision of information services in developing countries by supporting local indigenous initiatives. The need for such a strategy became evident as the use of information to secure socio-economic development became apparent. Workshops were held where specific information needs of the continent were tabled. After intense discussions and deliberations, a strategy document on how Africa could strengthen its information programmes and services and the role that information can play in its further development was put together by the IDRC. According to Akhtar and Melesse (1994:315) the adoption of the strategy by the IDRC in 1988 was not a radical departure from its previous activities in Africa, but simply helped to focus on priority needs of the region. Meeting the needs of end-users and also those of researchers and policy makers was advocated. In particular there was a call for designing appropriate information services that would meet the needs of grass-roots users. Human resources development was also recognised as a vital tool for ensuring sustainability. The resulting document, entitled "*Sharing knowledge for development: IDRC's Information Strategy for Africa*" and known more commonly as the "*Africa Strategy*", articulated specific

objectives which would help direct assistance to information activities in Africa. According to Akhtar and Melesse (1994:315) the importance of indigenous knowledge to the development process was identified as a mechanism that would enable all Africans to come up with their own solutions to information and development problems.

3.2.1.2 The process

Lundu (1995:57) lists the salient aspects of this strategy as being:

1. The financial and human resources in Africa are limited and could most effectively be used with an explicit framework of objectives and programs consistent with Sub-Saharan Africa's own priorities and existing infrastructures.

2. The strategy provides the means for selection among projects and it supplies criteria against which existing and completed projects can be evaluated.

3. The diffusion of information on research and development linked to national and regional policies provides a better focus for the long term than uncoordinated sectoral concentrations.

4. Key among the spheres of action is capturing, repackaging and delivering information produced locally.

5. Suggestions are needed on how to use all types of media to disseminate information. Where possible support should be received on indigenous publishing, studies on the presentation and marketing of information for specific users and development of information systems that cater for local communities and government.

6. According to Lundu (1995:57) the major objectives of the strategy for Africa are:
   - To encourage sharing of information locally, nationally and regionally.
   - To support information systems that address local problems.
   - To promote standards and compatibility among national and regional information systems.
   - To improve the capacity among African nationals to plan and implement information and information policies.
   - To increase the use of local experts in information handling.

- To ensure the sustainability of information initiatives.

- To build human resources in information science, to promote participation by poor people.

- To improve access by local development researchers, decision-makers and practitioners to relevant information.

3.2.1.3 Evaluation

The IDRC process suggests that "ready made" frameworks and objectives be provided to countries. A clear advantage above other processes is that the capturing, repackaging and delivering of information produced locally, as well as developing systems that cater to local communities and government is emphasised. This strategy supports efforts being made by governments to identify their own needs and priorities. Another benefit of this approach is that the priority areas to be addressed by a policy are first identified and that the strategy provides for evaluation among existing and completed projects.

Although the strategy has several advantages, the disadvantage is that there is no logical sequence to follow in developing a policy. The essentials, such as objectives and focus on the strategy are provided. Even though the process takes local priorities into consideration, it is implied that African countries cannot draw up their own explicit framework of objectives and programmes and that this should be provided.

3.2.2 United Nations Educational, Scientific and Cultural Organisation (UNESCO) approach towards the formulation of a National Information Policy

3.2.2.1 Background

UNESCO has tried to provide an impetus for developing nations to address information policy issues. According to Rehman (1996:185) UNESCO published *"Guidelines on information policy: scope, formation and implementation"* by Wesley-Tanaskovic in 1985, which was replaced by Montviloff (1990) *"Handbook on the formation, approval, implementation and operation of a National Policy on Information"*. This handbook in

turn has been revised according to Niegaard (1999). Consultation services have been provided and many seminars and symposia sponsored. The basic UNESCO proposals are for the creation of a national information co-ordinating organisation, whose function would be to initiate the formulation of a policy (Mchombu and Miti, 1992:142). The handbook provides a list of the main characteristics of a National Information Policy and proposes a methodology for its formulation, adoption, implementation and operation.

3.2.2.2 The process

Rehman (1996:190-191) summarises the process that is followed by UNESCO as follows: All stakeholders need to be engaged at all the stages. Surveys and needs analyses should precede other stages of policy formulation. Support of international agencies and consultants may be sought, but the co-operation of political leadership, legislators, and bureaucrats must be ensured. Seminars and symposia should be organised, with draft policies being widely disseminated to generate useful discussions. Organisational structures for the implementation of policies and commitment of resources should be provided in the policy framework. Human resources development should be targeted, and periodic feedback should also be incorporated.

According to Montviloff (1990) the policy process comprises three phases.

PHASE ONE Formulation of a National Information Policy

- Assessment of the national information environment by means of a survey or national information audit. This is to determine objectives, coverage and procedural aspects.

- Preparation of preliminary documentation for a national consultation and to ultimately consolidate the national case study on information resources and services.

- Organisation of a national consultation to discuss the policy issues as presented in the preliminary documentation.

PHASE TWO Official approval and adoption of a National Information Policy

- Preparation of the final version of the policy proposal.

- Submission of the final policy proposal to appropriate government authorities.

- Integration of the information policy into the development policy in order to achieve wider acceptance of the strategic significance of information.

PHASE THREE Implementation of a national policy on information.

- Establishment of a co-ordination mechanism where a variety of broadly dispersed information programmes and activities exist.

- Development of a plan of action which serves as a "backbone" along which the various information programmes and projects are arranged.

- Provision of financial resources for the implementation of the national information programmes.

- Operation and evaluation of information policy. The policy-making process is continuous and can never be considered finished.

Horton (2000) provides an executive summary of the revision of Montviloff's 1990 edition of "*A handbook on the formulation, approval, implementation and operation of National Information Policies*". Unfortunately a copy of this handbook was not available for scrutiny. According to Horton (2000) this is a practical tool for policy level officials on the ideas of the information superhighway, cyberspace and the Information Society.

3.2.2.3 Evaluation

UNESCO has experience in developing these types of policies by having applied and financed them in numerous countries. An advantage of this approach is that the same guidelines can be applied while reviewing the information policies of different countries. The handbook promotes the formulation of a national policy on information and its implementation, rather than just the organisation of information resources and services. The proposed methodology leads to a systematic planning and implementation of an information policy and leaves room for various alternatives to respond to unforeseen constraints (Montviloff, 1990:18). The methodology also takes into account the fact that a variety of information policies or policies which are closely related, already exist in most countries.

On the other hand although UNESCO provides step-by-step prescriptions it leaves no room for local initiatives. According to Montviloff (1990:19) the methodology provides a

basis for reflection and a general agenda for the preparation of a national policy on information to guide the development and management of information resources and services. A selected list of UNESCO guidelines for data collection is provided, however, all these guidelines originate from the 1970's and 1980's. Technology changes constantly and therefore it is not only the policy itself that needs updating but the process as well. Montviloff's handbook has been revised, with the new edition focusing on cyberspace and the information superhighway. According to Niegaard (1999) the new edition of Montviloff's handbook does not include the general public as a target group, but focuses on information with regard to scientific or industrial use. In addition Niegaard (1999) feels that the new edition does not cope with current developments in the field of libraries, specifically with regards to the information technology available to libraries, and the important role library infrastructures can play in development.

Montviloff's (1990) handbook addresses itself to information specialists, but more particularly to professionals involved with the development process. Africa is in a unique situation regarding social and economic development. It is thus with difficulty that the UNESCO process is applied to African countries. Foreign experts are expected to play a role in the policy formulation process, however their transitory nature makes them suitable only at the advisory and training level. These specialists from "outside" the country should train local human resources. A shortcoming is that they are involved in a situation that they might not understand due to the language and culture being totally different.

3.2.3 National Information Technology Forum (NITF) document *"Towards an Information Society policy for South Africa"* (1997, draft 5)

3.2.3.1 Background

This process proposal from the National Information Technology Forum of South Africa suggests that the policy process should be accountable, inclusive, transparent, broad-based and that it should take place within the developing world context. Furthermore there should be consultation and the policy must be grounded in current South African

information technology and societal realities. The formulation process must also take cognisance of international and global trends.

The National Information Technology Forum (1997:3) issued a document, *"Towards an Information Society policy for SA"* which states that the Information Society process is of overriding national importance, and spreads across the full range of government and departments and societal sectors. It is for this reason that the National Information Technology Forum suggested that the political ownership of and responsibility for the process should rest with the office of the Deputy State President.

3.2.3.2 The process

The National Information Technology Forum proposes that the process should be directed and managed by an "Information Society Policy Taskforce", which would produce interim findings and make specific recommendations for action prior to tabling a final report. The following content framework is proposed:

1. Introduction: the Information Society today within the international context and international policy initiatives.
2. The Information Society in South Africa, which includes a national audit of information technology.
3. Objectives and principles should be in harmony with national objectives.
4. Developing an international approach, placing South Africa within the developing world context and governed by its need to ensure equitable integration of its needs and goals within the international information order.
5. Any Information Society depends upon the extent of its technological resource base and its information architecture.
6. Information and communications technology must find its justification in the economic and social benefits of the country.
7. Ultimately it is human factors that determine the success of an information economy, therefore education, training and human resources form a crucial basis for the Information Society.

8. South Africa should strive towards Information Society policies that promote social equity.

9. For South Africa to be able to meet its own needs, it must have the capacity to promote innovation, research and development and develop indigenous solutions.

10. Government has to play a major role in creating an appropriate environment for the growth of the information industry and its beneficial use by the whole society. This includes the establishment of an appropriate policy framework and the provision of necessary incentives.

3.2.3.3 Evaluation

The advantages are that the proposed process has to be accountable, inclusive, transparent, broad-based and that it will take place within the developing world context. Furthermore there should be consultation and the policy is to be based on current South African technology and societal realities. It is essential to take human factors such as education and training into consideration. The National Information Technology Forum proposal suggests a task force to develop and implement a National Information Policy. This task force would have representatives of all sectors. An advantage of this process is that it takes place within the realities and context of a developing world and also takes cognisance of international global trends.

A disadvantage is that the proposed national audit focuses primarily on technology. Other factors such as current infrastructures, as in libraries and community centres, are not taken into consideration and neither is human expertise. This approach also relies too much on government in order to create an appropriate environment. The private sector should also be involved, especially in providing funds and co-operation in providing the necessary information for a national information audit and determining needs and goals.

3.2.4 Summary

In the preceding pages an overview is given of three major proposals towards the formulation of National Information Policies. Each proposal suggests its own method for achieving a National Information Policy. The IDRC's *"Africa Strategy"* comes from a

- Regulatory agencies.

- Non-government organisations, for example UNESCO and the IDRC, and civil society.

- Research and development organisations such as tertiary institutions

- Organised labour and information professionals.

- Information technology providers.

- Publishers.

- Distributors of information.

- End-users.

The United Nations Economic and Social Council (1993:15-18) in their *"Strategic Agenda for Development Management in Africa in the 1990's"* divide the stakeholders or actors in the management of development projects in Africa into two types, national actors and external actors.

1) National actors

The challenge for actors at the national level is to ensure that the framework in which development is going to take place becomes hospitable for private and public initiatives. Government, business, people, their organisations and Non-Government Organisations and institutions of higher learning and training and research centres do this, and each has a role to play.

A) Government reassesses the existing legislation, policies and regulations so that they become more supportive, but also protect the public from being exploited. It encourages a political climate in which public debate about the policy is encouraged so as to broaden the involvement of other stakeholders in the policy making process. It maintains political stability and initiates steps to make governance more transparent and accountable. It provides a favourable macro-economic environment. It also ensures better and more effective use of public resources by, for example, developing and strengthening national capital markets in order to enhance the capacity for domestic funding.

B) Business facilitates the access of entrepreneurs to markets and credit facilities. It encourages the development and use of local technology and resources. Ethical practices and social responsibility are developed and maintain to ensure that its public image is one of concern with development. Business forges partnerships with institutions and universities to promote applied research and training. It also encourages and secures reinvestment of profits locally so as to build up confidence and attract foreign investments.

C) People, their organisations and Non-Government Organisations must be ready to seize initiatives and exploit new opportunities. They must foster partnerships with government and business, form and strengthen institutions of civil society that play the role of watchdog on public institutions, and mobilise local resources through self-help activities that match outside contributions. Grassroots opinion must be educated to benefit from entrepreneurial schemes, and viable and effective networks and communication structures to exchange information, and disseminate innovations must be established.

D) Institutions of higher learning and training and research centres must enhance the interface with government with a view to further the contribution of national experts. Curricula must be revised to reflect current African realities and provide students with knowledge that is relevant to dealing with present and future problems. The necessary steps must be taken in consultation with government and other relevant actors to retain faculty and providing them with incentives to be more productive in both teaching and research. Institutions of higher learning and training should initiate and participate in the development and promotion of indigenous technology. Networking with managers, researchers, administrators and scientists in government, business and other sectors, with a view to knowledge transfer for application in the world of business. Intra-African co-operation among centres of higher learning must also be promoted.

2) External actors

External actors include governments, business, multilateral agencies and Non-Government Organisations. Their role includes providing African countries with substantial external support to supplement their efforts for some time to come. An acknowledged problem of the past must also be rectified. This is that the manner in which assistance has generally been given has often been "donor-driven" and designed to execute specific projects and programmes according to donor specifications rather than to build and sustain local capacity.

The key responsibilities of especially external donor agencies are to:

- Provide support and substantial external resources.
- Co-ordinate funding and assistance targeted to priority areas, this must promote capacity building and self-reliance.
- Provide the means for more effective use of external assistance.
- Provide assistance in support of better governance through accountability. Donor agencies should also be ready to accept responsibility for any failure of their advice.
- Assist programmes that stem and reverse the brain drain from Africa.
- International Non-Government Organisations should promote the need for adequate support.

Although each individual country must develop policies and capacities that are relevant to its own challenges and opportunities, regional and sub-regional actors have an important role to play as catalysts of new ideas and advocates on behalf of Africa in the international arena. Primarily it is necessary as far as possible to involve those who are directly concerned with any given policy, whose livelihoods are likely to be affected and at the same time whose knowledge of the system has an important informative role to play. The right to know is not adequate unless it is accompanied by reforms that allow for the right to participate in decision-making processes.

3.3.2 The different steps in the formulation of an information policy

The processes discussed in 3.2 make no reference to consultation with the people it will influence and therefore lacks human interaction. Information policy as a discipline is about the inter-relatedness of the micro and macro perspectives and the interaction between the cultural, organisational and technical aspects. Many approaches to information policy making have been one-sided in that they have mainly adhered to the purely technological aspect. Technology does not exist in a vacuum, but must be viewed as an interaction between cultural, organisational and technical aspects. Each of the discussed processes lacks one part or another, and it is for this reason that an own approach towards the formulation of a National Information Policy for South Africa is suggested. It is based on a thorough theoretical underpinning of information policy theory with a logical step-by-step approach.

The National Information Policy formulation process suggested is primarily from an Information Science perspective, but more specifically from the perspective of information for development. In other words it is aimed at uplifting all sectors of a country and thus forms a wide base. Ready-made frameworks such as those provided by the IDRC and UNESCO were found to be too broad. As stated earlier, a National Information Policy should be adapted for a specific country, with the methodology being suited to that country's circumstances as well as leaving room for local initiatives. Thus the following guideline with three steps for formulating a National Information Policy is introduced.

Step 1. Objectives and policy goals

The country's information situation is first assessed, that is, past policy initiatives, the present situation regarding technology and other resources, human resources and the way in which information moves through its lifecycle from generation to storage are reviewed. Once the documentation and feedback from the national consultation has been examined, objectives and policy goals can be laid down, within the framework of the country's development objectives.

Step 2. Policy formulation and implementation

The factual information such as statistics, finance and human resources collected in the previous step are analysed and used. Systems for the capturing, repackaging and delivery of information produced locally will be designed. Thus the formulation stage translates the goals and objectives set into feasible plans, programmes and projects.

Step 3. Evaluation and policy review

The policy making process is continuous and can never be considered finished, thus the operation of the policy is evaluated and revisions made on a regular basis. The policy process should make provision for the review of existing and newly created institutions, technological developments, changes in and new influencing policies and services, with the intention of revising, endorsing or expanding them.

3.3.3 Summary

The most important role players are the government, providing incentive schemes and policy frameworks, business and Non-Government Organisations providing the all-important funds, international knowledge and resources. Institutions of higher learning provide added expertise of local conditions and new research and innovations. Non-Government Organisations, information professionals and experts from institutions of higher learning do the initial analysis of the country's situation. Government, business and Non-Government Organisations should make the necessary information freely available for this process as well as provide the infrastructure and human resources of statisticians and analysts for the examination of collected information. All role players then state their objectives and goals, in other words what they expect to get out of the process. An overall objective of the National Information Policy is the social upliftment and development of people on grassroots level, therefore they are probably the most important role players. According to Stanat (1995:2) information professionals must then determine what kinds of information are required. Information professionals and experts then synthesise these overall goals and objectives into specific goals and objectives of an information policy plan.

3.4 An own approach towards the formulation and implementation of a National Information Policy

3.4.1 Information gathering and the three levels of analysis

3.4.1.1 Information gathering

As introduction to the policy development process, the Information Society within national and international policy initiatives must be studied. It is necessary for policy makers to have a sound theoretical foundation and understanding of the subject area in order to develop the best policy possible. This is followed by an intense information gathering process within the country itself, known as an information audit. It is carried out in order to gather facts such as the country's development objectives and priorities and the government structures within which will be worked. The country's structure also determines the information flow. We need to know the country's "culture", not only how the country is governed but also the way in which it is done. Projections of the future conditions must also be made. The information to be retrieved by the audit thus involves the collection of background information about past development projects in the local area. A look must be taken at which government and Non-Government Organisation projects have been successful or have failed in specific areas. The content and relevance of generated information must also be reviewed.

A proper assessment of the information process in any given social framework should start with a close look at information generation. It is important to know its coverage and the timeliness and timing of information generation in terms of the right information being produced at the right time. The importance of accuracy also needs emphasis. What types of information are required must also be established, that is, the end user's needs and priority areas. The best possible source of that information for the least amount of money and the quickest turn-around time must then be found. External, internal, manual as well as automated sources, services and systems must be reviewed in order to assess that which

is of special national interest and priority. The way in which information flows must be looked into. A review of existing information services and infrastructures, including the extent to which such services are in a position to meet identified information needs, and the available financial and human resources, must be undertaken. Finally preliminary documentation of the findings must be drawn up for analysis and a national consultation process.

3.4.1.2 Three levels of analysis

In chapter two Moore's (1996a) analytical matrix was used to identify information policy issues. When analysing the problem the prime object is to assess the needs of the users, then assess the extent to which existing information is being utilised. Secondly an assessment of the information generated by government and private sector and the sources used must be identified. What is intended here is to form a theoretical framework for understanding the nature of the problem by analysing the information gleaned from the information audit in order to derive objectives and goals for the formulation and implementation of a National Information Policy.

Three levels of analysis based on Moore's (1996a) information policy matrix may be used. The three levels of information policy analysis are the industrial, organisational and social levels. The industrial policy level relates to the development of an information sector at a national scale. Thus the main concern is the development of the information industry as an industrial sector in its own right, which has, at the same time, an important facilitating role as a supplier of information to other industrial sectors. At the organisational level we are concerned with the ways in which organisations use information as a resource within organisations to increase productivity, efficiency and competitiveness. Finally at the social level we are concerned with information needs and information provision related to individuals and social groups. For example, questions of citizenship and participation are addressed.

The question as to who should do an information audit and analysis leaves us with two options. Outside consultants will ensure objectivity but will lack the insight or understanding of the operation of the government. The role played by consultants will be defined by the government itself on the basis of the knowledge that exists within the government and within the framework of its objectives. Alternatively an internal task force, which will have the necessary background knowledge but may lack objectivity, can be employed. To solve this dilemma a third option can be to combine the above two options by having internal staff as well as consultants working together, this ensures an understanding of the government processes and will increase objectivity. Thus objectives are set up within a framework to interpret everything we learn about the country, such as how it evaluates information, evaluates possible courses of action and decision-making.

3.4.2 Objectives and policy goals

Once the preliminary documentation and feedback from a national consultation has been done and the information analysed, objectives and policy goals are laid down. When the main objectives of the information policy are accepted and understood, they should become a formal part of the country's objectives, select areas for further development and draw in representatives of the people who are the most concerned with them. Inside knowledge of the country is the key to choosing both where to start and the subsequent sequence of projects.

An objective of a national information policy, for example, is to protect, develop, control, retrieve and make information available as a national resource, and to promote its use in all domains of society (Boon, 1984:16). Another goal may be to achieve optimal utilisation of the planning, decision-making and problem-solving resources, the information and professional knowledge generated and available in a country or abroad, in order to promote sustainable development.

3.4.3 Policy formulation and implementation

3.4.3.1 Policy formulation

Once all necessary information has been gathered and analysed, it is used in conjunction with the goals and objectives set in the previous step to develop a plan of action, or in other words a policy should be designed, according to the country's specific and unique structure and needs. Identifying training needs is also essential, as well as how it will be monitored and evaluated. It is important to agree on methods to make reliable monitoring easy and cost effective. This phase is the stage where information is circulated by information inter-mediation, where a working framework may be developed via meetings, discussion groups, seminars and conferences.

A policy is written on the presentation and marketing of information for specific users and the development of the information systems that cater for local communities and government. The policy itself is usually made up of statements on a number of policy positions and development guidelines given the status of law by means of legislative action. One aim of the policy is to ensure the unimpeded flow of information. A global vision provides the ideal to enable countries to co-operate in the global environment, but will have to allow for a national vision for each country to express the national needs, goals and cultures of each country in its particular situation. Systems for the capturing, repackaging and delivery of information produced locally must thus be designed. Information use and technology in relation to human resources as well as objectives must also be included. The final proposal, which is to be executed, is submitted to the appropriate government authorities from where it is integrated into the national development policy.

3.4.3.2 Policy implementation

The implementation stage of the policy process involves translating the policy objectives into more specific, problem oriented, policy statements with an indication of the nature of actions to be taken and the policy instruments to be applied. Information professionals and institutions are the major actors at this stage. External donors are also actors at the

implementation stage, as it requires considerable input of funds, equipment and qualified human resources.

The upheaval that implementing a coherent National Information Policy can cause must be considered at all levels of society and the economy. According to Hill (1993:189) it will require:

- Active networking, cutting across traditional administrative and organisational lines.
- Major reorganisation and reassignment of responsibilities at operating levels.
- More open and transparent decision-making in various private and public bodies.
- The development of adequate incentives to promote systems integration between the different actors.
- The multiplication of institutional "meeting points" where the various actors can confront their interests, and discover their common ground. At government level, this will be translated in terms of closer co-ordination between a number of different ministries and departments.

Once the policy has been designed, developed and approved, all shortcomings and faults eliminated and all stakeholders are satisfied with the end product, the policy will be put into actual working order. Implementing the project is also the best and virtually only way to see whether it is successful and that it meets all stakeholders' needs. Thus the formulation stage translates the goals and objectives set into feasible plans, programmes and projects.

3.4.4 Evaluation and policy review

Constant monitoring of any systems and functions will be needed to keep the policy in working order. As stated by Montviloff (1990) the policy making process is continuous and can never be considered finished, thus the operation of the policy is evaluated and revisions made on a regular basis. The policy process should make provision for the review of existing and newly created institutions, services, technology and the instruments of policy implementation, with the intention of revising, endorsing or expanding them.

Information audits are considered necessary to identify gaps as discussed above. The key actors here include government policy makers, special interest groups and information professionals.

3.5 Summary

The feasibility of a policy depends on various factors, such as the internal structure of the policy itself, and the field for which the policy is determined, the resources available and the priority given by the government to the implementation of the policy. Motivation for policy development and change comes from all sectors of society. Thus an overview of three different policy process proposals was given. These include the IDRC *"Africa Strategy"*, UNESCO's handbook on the formulation of a National Information Policy by Montviloff (1990), and because we are primarily concerned here with South Africa, the important progress made by the National Information Technology Forum. Some authors, such as Sturges, Mchombu and Neill (1996:122), feel that there has been an emphasis on information being obtained from "outside" and then fed downwards to the citizen in African countries, and this has pervaded the development strategies adopted in the past. Each nation has its own peculiarities, and policy issues cannot be ascertained solely from the UNESCO Guidelines or other similar "how-to" types of manuals. An intensive engagement of everyone concerned is required. Resulting from these discussions then and keeping the theoretical basis laid down in chapter two in mind, a four-step process for the formulation of a National Information Policy in South Africa is suggested. This process includes an exploration of the three levels of analysis required in the examination of the information recovered by an information audit. Following this analysis, objectives and policy goals are set up. The actual formulation and implementation of the policy follow this. For the policy to be successful it must be evaluated against the original goals and objectives set and it must be reviewed and improved at regular intervals.

A problem facing many African countries is that although ministries do exist for planning, few of them actually facilitate the required policy analysis and planning support for which

they were established. When policies are formulated these ministries are often not involved, or are located elsewhere in government. According to Oosthuizen (1996:61), they thus lack clarity, are intrinsically flawed in terms of functions and structures and are ineffective. It is thus felt that the role of knowledge in the analysis, formulation, conduct and evaluation of policy needs is to be given greater focus, because in the final analysis it will be the politicians who will determine the end product. The perception by politicians of the role that information can play in the process of national development is thus more crucial than the perception of information professionals. A nation's information policy must acquire a broad view of that nation's history and traditions. In short, the context out of which specific policies arise must be known.

In the next chapter, a closer look will be taken at specific National Information Policy formulation efforts of Malaysia. The country's national priorities, developments and obstacles to development are discussed.