Identifies, through system analysis approach, a variety of factors affecting the planning of a National Information System (NIS). The objectives, inputs, functional organisation stresses and strains in planning of (NIS), the environmental factors affecting the system, the built-in features to overcome these, integrating the (NIS) plan with the overall socio-economic plan and the necessary task force for implementing the plans, are stated. The need for a course in "Planning of library and Information Systems" is emphasised.

0 INTRODUCTION
01 National Information System
   It has been realised the world over that scientific end technical information is an industrially exploitable commodity. Therefore, it has been found necessary by many national governments, their agencies and other autonomous bodies engaged in research and economic development, to establish an organised and effective national information system for communication of ideas.
02 Planning of Information System

Thus, in any plan for promoting socio-economic conditions of a society, it has been found necessary to include a plan for the establishment and operation of an information system for the activity in that field.

03 Scope of Paper

The paper aims at identifying certain factors to be considered in the planning process for developing a National Information System for the communication of ideas.

04 Features of a National Information System

In planning an integrated national information system (NIS) for the communication of ideas, the following features of the system are to be kept in view:

1. Overall objective of the NIS;
2. Type of inputs forming components of the NIS;
3. Functional organisation of the components to maximise the productive performance of the NIS as a whole towards achieving its objectives;
4. Stresses and strains and inadequacies of the components and of the NIS as a whole;
5. Environment in which the NIS is to operate and the environmental factors that may cause the stresses and strains;
6. Features to be built into the NIS for minimising the harmful effects of the environmental factors;
7. Inter-connection and integration of the NIS plan with the plans and programmes for development in other sectors; and
8. Identifying, selecting, and assigning the responsibility to appropriate institutional facilities to secure
proper design, implementation, operation, and development of different components of the NIS.

1 OBJECTIVES OF THE HIS

The objectives of the HIS may be stated as followst

1 To facilitate the selection and communication of ideas from the points of their generation and availability to their potential users;

2 To provide information pinpointedly, exhaustively, and expeditiously and present it in a manner most convenient to the respective users, at a reasonable cost, with a view to securing an adequate conservation, utilisation, and development of intellectual resources;

3 To promote a continuous research in the field of library and information science so as to develop better techniques and tools for selection, acquisition, storage and dissemination of information.

2 INPUTS TO THE SYSTEM

The inputs forcing the components of the HIS include the following:

1 The variety of information and their respective sources;

2 The variety of users of information — such as, academic and research personnel at all levels, management personnel in all institutions, and the governments;

3 The science and technology of selection, processing, organisation, retrieval, and dissemination of information, and feedback on the services;

4 Human resource — such as, the professional expertise, managerial expertise, and other skills — needed in the design, operation and development of the system; and
5 Financial resources and other material facilities.

3 SYSTEM STRUCTURE AND ORGANISATION

In structuring the NIS as a whole, the following factors need to be taken into account:

1 The variety of information systems existing and the types to be selected for adoption and development. For example,

By Level of Service

(a) Local information system serving a well defined, known, comparatively small clientele.

(b) State or regional information system serving a less well-defined, but comparatively larger clientele.

(c) National information system serving an even less well-defined, but comparatively much larger clientele.

By Range of Subject Coverage

(a) Service covering a fairly well defined homogenous subject or group of subjects with a comparatively small seepage of information — for example, food technology, leather technology.

(b) Service covering a fairly well defined homogenous subject or group of subjects with comparatively greater seepage of information — for example, statistical methods, instrumentation, production engineering, agriculture, and management sciences.

(c) Service covering a wide range of subjects — for example, Physical sciences, Medical sciences, and Behavioural sciences.

By Orientation of Service in Terms of Clientele

(a) Research and development personnel only;
(b) Research personnel and industrial and production personnel;
(c) Government; and
(d) Public at large.

**By Variety of Services**
(a) Current awareness
(b) Retrospective search
(c) Abstracting
(d) Digests
(e) Product information
(f) Data service — technical and economic
(g) State-of-art and trend reports
(h) News briefs, etc, etc.

**By Access**
(a) Defined clientele only
(b) Any person within the premises of the system
(c) Anywhere in the country.

**By Defined Function**
As distinguishable between a local service and national service.

**By Sponsorship and Support**
(a) Government — Central, State, etc
(b) Semi-government
(c) Autonomous body
(d) Private benefaction

2 The identification of existing services and categorising them according to the appropriate characteristics mentioned above.
3 The identification of the variety of information users based on their functions and their information requirement.
4 The proper coordination of the services and
facilities to form an effective network so as to secure maximum utilisation of the available resources and facilities.

5 Assignment of priority for development of the different systems, existing and proposed.

4 STRESSES, STRAINS, INADEQUACIES

Inadequacies may occur in the different aspects and components of the NIS, such as the following:

1 The method of system planning and designing adopted.
2 Knowledge of the information needs of the clientele served.
3 Information sources accessible.
4 The science and technology of information handling adopted.
5 The expertise and skills available.
6 Finances and other physical facilities available.
7 Attitude of the society at large and of the authorities that matter, to the value of information in research, production and management functions.

5 ENVIRONMENTAL FACTORS

The environmental factors that need consideration in planning and designing the NIS include the following:

1 The institutional and governmental policies regarding the acquisition of information resources in adequate measure to meet the varied needs of research, industry, and management.
2 The variety of educational and training facilities available to develop in adequate numbers the professional and other personnel required to implement the plans and programmes at different levels and stages of development.
of the NIS.

3 The institutional and governmental allocation of funds for establishing and developing information systems at various levels.

4 The inadequate development of scientific research, production facilities, and managerial performances, such that the demand for information is at a comparatively low level.

5 The impediments and barriers to the effective communication of ideas — such as, over-abundance of information, accelerated rate of production of information, occurrence of unwanted, redundant and erroneous information, language barrier, time for publication, processing, dissemination etc of information, secrecy, copyright information, cultural barrier, etc, and cost of access to information.

6 Developments in information science and technology.

6 BUILT-IN FEATURES

The features that may be built into the plan for the NIS so as to minimise the environmental effects (Sec 5) and the system deficiencies (Sec 6) arising thereof, include the following:

1 An explicit statement of objective of each information system forming the network.

2 Choice of suitable models as guidelines for the design and development of different information systems at different levels.

3 Formulating guidelines and recommendations regarding the information services that may be rendered by different types of information systems, at different levels.
4 Establishing effective network links between the systems and coordinating their functions and services.
5 Taking steps to promote the effective use of information in research, industry, and government.
6 Promoting the establishment of the means and methods for developing the different types of expertise required in the design and operation of information systems.
7 Promoting the establishment of the means and methods of training and orienting users of information.
8 Establishing criteria for evaluating the performance of information systems.

7 INTEGRATED VIEW

In order to get a proper perspective, it is helpful to view the plan for the NIS in relation to
1 The plans for other sectors — such as, the education plan, the science and technology plan (for the different subject fields), the industrial development plan, etc.
2 The existing pattern of development of information systems in this country and in other countries.
3 The variety of media available for communication of information and their proper utilisation.
4 The mutual impact between information system on the one hand and the education system, technological developments, research and industrial development, etc on the other.
5 The total resources — men, money, material — available for allocation to the different development programmes and the targets and the priorities established for each of the programmes.
8 TASK FORCE FOR WORKING OUT MODEL PLANS

It would be helpful to constitute a task force to consider the different aspects of the NIS mentioned in the preceding sections and formulate model plans for different types of information systems. The plans should provide recommendations and guidelines on the following features of the system:

1. Structure and functions
2. Information resources that may be used
3. Services to be rendered
4. Personnel requirement
5. Building and equipment requirement
6. Financial requirement, resources, and allocation of funds for various activities, services, etc
7. Phased development and growth rates

Such guidelines and recommendations should be provided for different types of information systems operating at different levels.

91 CONCLUSION

In the preceding sections, a set of features and factors to be considered in developing a plan for a national information system have been presented. These are derived on the basis of system analysis approach. Thus the complicated nature of Information Systems Planning has been highlighted. It is fast developing into a specialised branch of library and information science. Several techniques developed in other fields such as program budgeting, flow charts, PERT, Critical Path Method, and Simulation technique provide useful guides in the methodology for planning library information systems. It is suggested that advanced courses in Library and Information Science should lay emphasis
on teaching "Planning of Library and Information System" as a discipline. It would not only help in providing a conceptual framework for the student about library and Information Systems, but also helps in equipping him to interact systematically and consciously to the changing social and economic environment of library and information systems.