

**TECHNOLOGICAL ASSESSMENT AND IMPACT ANALYSIS
OF CREATING A
NATIONAL MARKETPLACE FOR INFORMATION**

for the
N C S T Panel on Futurogy
Department of Science & Technology
Government of India

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INTRODUCTION

The process of economic development as manifested in different countries supports that countries at different stages of development need varying mixed of resources and facilities. Information is one such recourse whose ready availability is increasingly felt with successive rounds of industrialization. Moreover, in the present context of a new international economic order that calls for harmonious global development and equitable utilization of resources by all the countries of the world, the need for developing efficient information flows in the developing countries has assumed greater importance.

What type of organizational form and communications channel would be most appropriate for the information systems of a country, would depend upon a variety of factors describing the needs, constraints, and general economic characteristics of the country in question.

Recent technological achievements in the field of communications and computers greatly influence the selection of the type of information system for a country. In the case of high technologies, the decision on their introduction into a country needs to be carefully weighed: Introduction of high technologies presents a significant structural change of the concerned sector of the economy and has wide ranging long-term repercussions as well.

The present study postulated the need for creating a National Marketplace for Information in India. The concept of a National Information System has already received Government approval and is being implemented through a National Informatics Centre, with the objective to supply information to Government Ministries and to assist them in decision-making for socio-economic development and planning. The information available with the National Informatics Centre would be highly aggregated and not detailed to the extent useful for industrial requirements. Thus, as far as the information needs of the individual companies in the industry are concerned no information system has been proposed. An information system is, therefore, required to cater to the needs of the industry. In contrast to the National Informatics Centre, which is under a single (State) ownership, a multi-ownership information is being proposed.

2.1 Information Scene in India:

Information is Power. We see this very clearly in the West, and increasingly in India. With development, more and more complex systems come into existence and to nurture, maintain and control these systems more and more information is needed (Exhibit 3.1, 3.2)

Parallel with the increase in the absolute quantum and variety of information required, the phenomenon of specialisation has resulted in the increased dispersal of sources, channels and users.

These observations are particularly applicable in the context of Indian industries. Here, in addition to the information regarding raw materials, processes, finances, manpower, markets, competition, buyer behaviour, etc., the industries also need information on government policies and plans. Similar industries, or companies engaged in the same industrial activity, have similar interests - something which is reflected in the way they form associations. To function effectively an industrial firm has to gather information about the environment, or what could be more appropriately termed as macro-economic information, and also commercial information pertaining to their industry. This kind of information is collected, compiled and published by various government ministries and agencies like Central Statistical Organisation, National Sample Survey Organisation, etc. (Fig 4.2), and some private sector firms like the Operations Research Group.

2.2 Survey and Main Findings:

SRI undertook a countrywide survey to find out the kinds of information various industrial groups use and the sources they collect it from. Some significant findings from that survey are itemised below:

1. Most of the firms rely on Industry Association or Chambers of Commerce for their information needs.
2. The Information flows are mainly vertical. There is very little horizontal information flow among firms.
3. Only big firms have their own in-house information collection and processing cells. Most of the time firms rely on outside sources for information. To this extent companies situated geographically away from information centres - Bombay, Delhi, Calcutta, Madras - are at a disadvantage.
4. Information published by government bodies is usually delayed and published in a form which makes it difficult to use (Fig. 4.1)
5. Industries are willing to pay a price for information they perceive as useful.
5. There are only a few commercial firms like the Centre for Monitoring Indian Economy and the Operations Research Group, etc., which collect, process and 'sell' information in the form useful for different industry groups.

2.3 NATIONAL MARKETPLACE FOR INFORMATION

Given the felt needs of the industries and the information flows as they exist now, we propose the formation of a “National Marketplace for Information” which will create flows to alleviate the existing qualitative and quantitative gaps that exist between the supply and the demand for information.

2.3.1 The Concept

The Marketplace would consist of a number of Information Firms and their supporting infrastructure. These firms will essentially be off-shoots of specific Industrial Associations or Chambers of Commerce. Since all the companies in one industry group (like Chemicals, Plastics, Forgings, etc. have similar information needs (and usually have an effective Association) one information firm would be established for each industry. In order to provide geographic proximity and to take care of regional variations, the information firms will have to be established near clusters of industrial activity. So in each industrial region there will be an information firm (or a branch office) for each industry groups, attached to the relevant Industry Association or Chamber of Commerce. In effect, the information firm will follow the geographic dispersal of the Industry Association with their respective HQs and branches/representatives.

The National Marketplace for Information will evolve into full scale operations, with a computer network handling the information flows, over three consecutive phases which are outlined in Chapter V.

2.3.2 Recommendations for the Roles to be Played by Different Agencies:

1. Industrial Associations Chambers of Commerce:

These units will help set up the information firms. The main help they give will be to lobby for the information firms and to facilitate the flow of information from private sources from within the industrial world. They will also help in the judicious functioning of NMI by way of checking malpractices like piracy of information or the supply of wrong information by industrial sources. They will also need to provide some of the initial funding and managerial staff for the information firms. We expect that the Regional Equipment Centres (which would have information storage and reproduction equipment like microfiche/films cameras and copiers and later, mini-computers) would be owned by and housed in the apex regional Chambers of Commerce.

2. User Firms:

User Firms will provide accurate information and data regularly in a format prescribed by their Association and the related information firm. They will provide feedback and suggestions to the information firms to improve their usefulness. They will make the information firms viable by paying the cost of services.

3. Information Firms:

Information Firms will collect relevant information from various sources including the government, and process that to fit the needs of their client industries. This information will be supplied to the industries on a regular basis as well as on "asked for" basis.

4. Government:

The government principally through the Ministries of Industry and Statistics will have a very important role to play in the development and support of the NMI. Government will have to make sure that the information supplied by its own agencies is reliable and timely. The time lags will be reduced by several orders of magnitude when government agencies supply data to information firms in a raw form. (Government agencies naturally take a long time after collecting data, in checking and rechecking, and finally having reports printed). The time lags could be cut further by making the data available in machine readable form. A agreement of cooperation could be there, for example, between the National Informatics Centre and the firms in the Marketplace for mutual exchange of information. Another element of government policy could be to "publish" statistical data in the form of computer tapes which are made available to the information firms.

Government will also have to provide some subsidies to the information firms in the initial phase, to make them economically viable.

Sometime later, Government will have to promulgate legislation on the lines of the Data Surveillance Bill in England, to ensure privacy and to regulate the accuracy and quality of information.

2.3.3 The Technology:

The information firms in each region would ultimately share a medium-sized minicomputer located at a Regional Equipment Centre. The various information firms would have on-line terminals, and any users who are interested could also have that facility. Information will also be stored on micro-fiche/film and magnetic tapes. The computers will be used for information storage and retrieval as well as for computational and other processing purposes.

In due course of time all the above mentioned computers will be linked through telecommunication channels with one another and with the National Informatics Centre (See Fig 5.4).

2.3.4 Evaluation:

Our Technology Assessment of NMI reveals that on the whole it would have several advantages:

- At present an enterprise has no access a multiplicity of information sources for its information requirements. The information then needs to be processed to become useful. With each company doing this for itself the total social cost is quite high. With the setting up of the information firms, they would take over most of this function resulting in economies and elimination of duplicate efforts. (This is illustrated in Fig. 5.1 and 5.3).

- Information will be available quickly and easily. It will also be reliable and accurate, because of the professionalism which will come about.

- Information will be available to smaller enterprises who cannot afford to have in-house information management activity.

- Increased reliability of information would lead to better forecasting and to the use of many other economic analyses which are known but not in use today.

- There will be an increased flow of information horizontally resulting in better decisions based on more up-to-date data about other sectors of the economy.

2.4 The Next Steps:

The following operational steps need to be undertaken in the immediate future to initiate the creation of the NMI.

1. Department of Science and Technology (as the catalyst) organises a National Seminar or has SRI organise one to introduce the NMI idea to the relevant government departments and Industry Associations.

2. D.S. & T persuades relevant ministries of Industries, Commerce and Planning to set aside Rs. 10 lakhs for the first year's pilot projects (information firms). SRI could serve as technical consultant during this stage.

3. D.S. & T commissions an evaluation of the working of these first pilot projects during their first two years.