RATIONALIZING THE DEVELOPMENT OF SCIENTIFIC AND TECHNICAL INFORMATION SYSTEMS IN NIGERIA

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Therefore, a status report is presented on the STI (Scientific and Technical Information) resources in Nigeria and the use of information technology.

STATUS OF STI SYSTEMS

Mental orientation to the development of STI systems in Nigeria is rather positive. In fact, discussions and recommendations on STI systems have not been lacking. Lawani and Odeinde examined in 1972 the prospects and policies for documentation and information services for science and technology in Nigeria [1, 2]. Odeinde [5] and others studied in detail the information needs of Nigerian scientists, examined the provision, accessibility and use of scientific literature [6, 7] and advocated for STI systems in Nigeria [8, 9].

Enough awareness and interest have, in fact, been generated to motivate various organizations to make some commitment, at least in principle, to the development of science and technology and information services support. This lead to the establishment of the National Science and Technology Development Agency (NSTDA) which was later transferred to the Ministry of Science and Technology, when it was created in 1979. The Ministry is responsible for making the national policy on science and technology and its implementation.

The Science Association of Nigeria, professional societies of various disciplines of science and technology and the Nigerian Library Association play a significant role in the development of STI systems.

Following are some of the valuable contributions made by various universities and research institutes towards the development of STI:
a) First Union List of Scientific and Technical Periodicals in Nigeria in 1970 by the library of the International Institute of Tropical Agriculture (IITA), Ibadan,

b) Union List of Serials in Nigerian Academic and Research Libraries by the library of the University of Ibadan,

c) Bibliographic control of scientific and technological research in the country by the Federal Institute of Industrial Research, Oshodi, Lagos, (FIIRO),

d) A survey of technical and industrial information needs in Nigeria, and

e) Organization of seminars and training sessions in computer applications in information processing,

f) The establishment of the Africa Regional Centre for Information Science at the University of Ibadan to develop expertise in the field,

g) National Bibliography of Nigeria published by the National Library of Nigeria,

h) Organization of number of conferences, seminars and national workshops to stimulate concrete planning for a national bibliographic information system for science and technology, to promote resource sharing and to familiarise with the modern technology of data flow and application telecommunications in it.

DATABASE CREATION

For a developing country like Nigeria, it is a crucial problem to acquire/generate bibliographic databases for literature search in the STI systems. Nigeria is now gradually getting the staff trained in computer applications which has made the problem of creating databases more feasible (Table 1) as a result of which the libraries serving STI users have started creating databases of their stocks. The Federal Ministry of Science and Technology is also making a useful contribution in both documentation and database development. It is currently undertaking a national survey of science and technology manpower in the country with the objective of creating a manpower database. The National Library of Nigeria is developing a database of the union catalogue of both monographs and serials of libraries in Nigeria. The FIIRO Library, one of the research libraries, is creating a database of current research projects in science and technology in Nigeria. This is in addition to the maintenance of...
Table 1
Skills Available in University Libraries in 1989

<table>
<thead>
<tr>
<th>Skills</th>
<th>No. of Libraries</th>
<th>No. of Specialists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Science</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Systems Analysis</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>System Design</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Computer Programming</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Data Entry</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>Online Searching</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Word Processing</td>
<td>7</td>
<td>10</td>
</tr>
</tbody>
</table>

database in the areas of interest to its parent institute. FIIRO Library had created following 11 databases by the end of 1988:

AID (Answered Inquiries Database),
CAPSTAN (Colourants, Additives and Preservative Standard),
CASE (Current Awareness Service on Economy),
COMPRESS (Company Profile for Extension and Similar Service),
DANTE (Data on Available Nigerian Technologies),
ITEM (International Technology Market),
MAIL (Mailing List),
PAIR (Patent Information Retrieval),
PIPE (Products and Industrial Profile Extracts),
RADIO (Research and Development Information Online and

Another research library, the IITA Library is currently maintaining the most sophisticated in-house bibliographic retrieval system in tropical agriculture. The system called ALISTRA (Automated Library and Information Service for Tropical Agriculture) contains records of materials available in the library, which are fully indexed for retrieval by various approaches. The database can be accessed through over 60 terminals and microcomputers scattered all over the institute. A serials control system, STACS, is also implemented. Besides the in-house database several databases on CD-ROM are acquired for literature search.

NATIONAL SCIENTIFIC AND TECHNICAL INFORMATION CENTRE

Discussions on STI system in Nigeria have lead to the establishment of the National STI Centre. The general expectation is that the centre should have a library maintaining a comprehensive collection of STI sources, documentation division, and a bibliographic and information retrieval system.

The centre is envisaged to perform following responsibilities:

a) Development and maintenance of a comprehensive collection of documents in the area of its relevance;
b) Production, maintenance and distribution of bibliographic databases;
c) Provision of current awareness services including abstracting and indexing services and selective dissemination of information;
d) Conducting literature searches on request;
e) Provision of referral services; and
f) Serving as the administrative and operational headquarters of a national STI network involving libraries providing STI services in Nigeria. The national STI centre may not necessarily exist as one physical complex. It may be structured on sectoral basis having several sectoral centres based on different disciplines.

NATIONAL NETWORK

The ultimate goal in rationalizing the STI systems in Nigeria is the implementation of an effective and efficient network system making STI databases accessible to users anywhere in the country also providing the services of the international information systems. In the agricultural sector there are 17 large libraries belonging to the Federal Ministry of Science and Technology, Ahmadu Bello University, Obafemi Awolowo University, and the Universities of Ibadan and Nigeria. In the area of science and technology the Federal Ministry of
Science and Technology maintains at least 21 research institutes. Their libraries, together with at least 23 university libraries and 23 polytechnic libraries, will provide vast resources for the network. In the medical sector, there are seven important libraries to contribute to the network. These include the Central Medical Library, Yaba, Lagos and the library of the National Institute for Medical Research. Others are the medical libraries serving the teaching hospitals of Ahmadu Bello University and the Universities of Benin, Ibadan, Ilorin, and Nigeria. When the national STI network is organized along sectoral lines, the sectoral network will need to be coordinated. The National Library of Nigeria has expressed the desire of assuming the task of this overall coordination and also the task of initiating the mission-oriented network.

CONCLUSION

The paper has tried to review past and present disposition towards rational development of scientific and technical information systems in Nigeria. It shows that there is some awareness of the need for such systems, and that there are vast resources and considerable organizational support for its development. What is needed, then, is a set of policies to regulate and coordinate independent efforts in the use of information technology and conceptual design of the STI systems if they are to contribute optimally to national development. Of course, such policies must get political backing and financial support of the Federal Government of Nigeria to ensure appropriate tempo of development in the desired direction. There are, of course, infrastructural problems which require decisive measures by the Federal Government. It is, however, encouraging to note that the Nigerian Telecommunication Limited (NITEL) is planning to provide a high speed data transmission service. It is also interesting to note that major computer installations are now able to minimize the destructive and disruptive effects of erratic power supply by installing the uninterrupted powersupply unit (UPS).

Individual libraries have some fundamental tasks to undertake, including documentation and collection of information materials of research done in their parent organization and immediate environs, preparation of a proper inventory of their resources, maintenance of proper records of their stock, and effective preservation of materials. Library automation requires careful planning. It is suggested that libraries in specific sectors seek a common understanding and a unified approach.

REFERENCES

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