

## INFORMATION SCIENCE



### Information Science

- Library Economy was the first term to denote the activities involved in collection, storage and dissemination of recorded knowledge.
- Library Economy was changed to Library Science in the last quarter of nineteenth century.
- At that time it was popular trend to call any discipline a science on which some literature had accumulated.
- The term science was added only to enhance the prestige of subject.

### Information Science

- Paul Otlet and Henri La Fountain attempted to compile a universal bibliography.
- This effort extended the domain of Library Science from recorded knowledge in books to other forms of documents like periodicals, theses, reports etc.

### Information Science

- In 1905 Otlet used new term Documentation to denote the scientific activity of gathering, processing, storing, retrieving and circulating documents.
- With the change in the name of Institute International Institute of Bibliography (Internationale de Bibliographie) into International Institute of Documentation (Institute Internationale de Documentation) in the year 1931 the term became well established.

### Information Science

- By the early fifties, documentation has been defined as the "art of collecting, classifying and making readily accessible the records of all kinds of intellectual activity".

### Information Science

- In the year 1950, Calvin Mooers coined a new term namely, Information Retrieval to denote necessary operation to gain access to recorded knowledge irrespective of the form of the document.
- Later on, when it was felt that there could be no retrieval without storage of information, the term IR was changed into Information Storage and Retrieval (ISR).

## Information Science

- The term Information Science was first used in the year 1958 by J. Farradane.
- In the year 1962, the term Information Science was used in place of the term Documentation in a Conference of Information Specialists held at Georgia Institute of Technology, Atlanta.
- This term fully established with the change in the name of American Documentation Institute into American Society of information Science (ASIS) in the year 1968. By this time the term was frequently used in professional literature.

## Information Science

- Russian workers coined a new term Informatics.
- It was defined as "Processes, methods and laws related to the recording, analytic-synthetical processing, storage, retrieval and dissemination of scientific information."

## Information Science Definition

"Information Science is concerned with the generation, collection, organisation, interpretation, storage, retrieval, dissemination, transfer and use of information with particular emphasis on the application of modern technologies in these areas. As a discipline it seeks to create and structure a body of scientific knowledge and system's knowledge related to the transfer of information. It has both pure science components, which enquire into the subject without regard to the application and applied science component which develops service and product". ASIS (1975).

## Information Science

- "Information Science is an interdisciplinary field of study of the nature ,properties, control and use of information". V. Slamecka(1965)

*Writings, works that  
influenced the development  
of Information Science*

- Vannevar Bush's 1945 article, "As We May Think" is widely regarded as the 'manifesto' of information science. It anticipated the development of post-War research on scientific communication and hinted at many relationships between technology and social process.
- Ludwig Von Bertalanffy's Systems Analysis, Nobeert Wiener's Cybernetics, and Claude E Shannon's Information Theory, Warren Weaver's Explication of Shannon's theory included with original text, made information theory accessible to social researchers sooner.

The Royal Society of London convened a conference on scientific communication in 1948 that included reports of empirical research on information use.

Two immediate achievements of this conference were the establishment of the need for author abstracts in scientific and technical papers, and a study by J.D. Bernal of how scientists seek and obtain information and how they use the tools and resources available to them.

In the United States, Publication of Bibliographic Organisation edited by Jesse Shera and, Punched Cards and Their Applications to Science and Industry by Margaret Egan, provided further thrust to the development to positive trends in the field of information science.

The US National Academy of Sciences convened a sequel conference on Scientific Communication in 1958 that included contributions from mainstream social researchers like Herbert Menzel, Everett Rogers and other sociologists.

Eugene Garfield, founding the Science Citation Index and the Social Sciences Citation Index, both as tools for researchers in the primary fields and as data banks of citation activity for Information Scientists.

Derek de Solla Price's Little Science, Big Science, published in 1963, was the landmark publication in information science during this period.

Price's rediscovery of the "invisible college" concept was well timed to inspire a number of social network analyses focusing on many fields of science.

New concerns of information science in the 1970s were actually anticipated in 1962 with the publication of *The Production and Distribution of Knowledge* in United States by the economist Fritz Machlup's Knowledge Society concept forged strong links between information science and economics, political science and policy analysis.

Books such as *The Age of Discontinuity* by the management specialist Peter Drucker, and *The Coming of Post-Industrial Society* by the sociologist Daniel Bell, are largely studies of the production and distribution of knowledge.

The field building efforts of Information Scientists like **Calvin Mooers**, who invented the terms like 'Information Retrieval', 'Descriptors', **H.P. Luhn**, who could be called a Thomas Edison of Information Science, whose inventions KWIC, SDI Systems, Auto-abstracting, Thesauri of indexing and retrieval terms are fundamental in the applications of computers to information and library activities.

The works of **Roger Smith**, father of online systems, and that of **Frank B. Rogers**, who directed the work of MEDLARS (Medical Literature Analysis and Retrieval) **Geral Salton's** SMART (System for the Mathematical Analysis and Retrieval of Text), **Frederick Kilgour**, who developed OCLC (now called Online Computer Library Centre) and **Carlos Cuadra** can never be forgotten for, these were the people whose work helped Information Science to reach its maturity.

The field of information science is concerned with

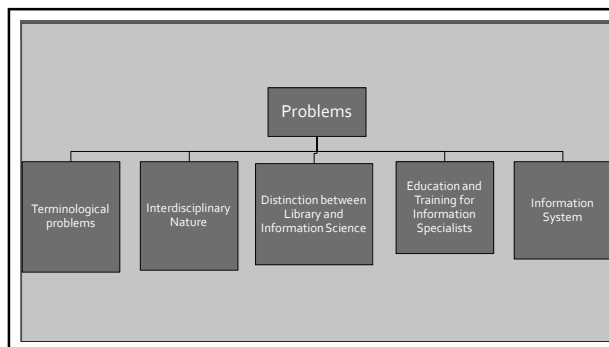
- The nature of information and information Processes;
- Measurement of information and information processes;
- Communication of information between humans and machines;
- The organisation of information and its effect of the design of machines, algorithms and human perception ;
- Measurement of the performance of algorithms for information processing;
- Artificial intelligence applied to information processing.;
- Human behaviour in respect to the generation, communication and use of information.

Charles T. Meadow (1979)

Information Science--the domain of ASIS--has had strong environmental influences, including:

- The growth of information technology, especially from about 1900 onwards;
- Complex relationships within the social structures of professional practice and professional education.

- Deeply rooted changes in the information services sector as communications, libraries, publishing, and other services undergo radical technological changes and, therefore, economic change;
- The strong influence of technological modernism: Technology + Standards + Systems + Efficiency = Progress; and,
- The move to digital technology.



- Information System are defined as environments (including institutions) of people, technology and procedures enabling the facilitation of the generation of new knowledge, the use of knowledge and the transfer of knowledge directed at solving problems and making decisions.
- Such a system consist the following subsystems(EAT-PUT Model):

**Event World**-refers to the states of objects, organism and surroundings

**Acquisition**-The performance of any system depend on its capacity to deal with forces outside its boundaries. In information science , it is concerned with how the system receives the output from the event world.

- **Transmission**-Transmission relates to the interface between the event world and acquisition, between acquisition and processing and between all sub-components of the system.
- **Processing**-Data processing is symbol manipulation according to certain algorithms. Human data processing is the manipulation of symbols through the senses. Mechanical data processing is the manipulation of symbols through machines.
- **Utilization**-Action
- **Transfer**-Communication system. It facilitates transfer of knowledge.

## References

- Satyanarayana,N.R.(1996)Problem of Information Science. New Delhi: New Age.

