Information Science: A Service Science Field with its Existing and Emerging Stakeholders- Techno-Educational Perspective

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ABSTRACT
Information Science is an Interdisciplinary domain responsible for several information and technological activities. Information Science is a broader field dedicated to the academic activities along with information and technological job. Fundamentally information science is responsible for several jobs like collection, selection, processing, organization, management and dissemination. These are the internal and core job of information science. However it is today majorly responsible for some other activities like information system analysis, designing and development, it has several stakeholders out of which information, computing, technology, users are considered as most valuable. This paper is talks about information science; emphasizing its application and utilization in today's age. The stakeholder gradients in information science are increasing day by day. This paper is about information and its value also.

Keywords:-Information Science, Information, Information Management, Development, Stakeholders, Knowledge, Information Transfer Cycle, Community Development, Information and Knowledge Society, Knowledge Economy

I   INTRODUCTION

Information Science is a domain for Information Management and Knowledge Engineering. It act as several activities related to Information and Technology like-Information Networks building, Designing and Development of Information Systems, Building data and digital repositories, preparing complete information transfer cycle and healthy information channel is also an important task of information science. Information Science or IS actually an interdisciplinary domain incorporated with so many subjects like Computer Science, Information Technology, Cognitive Science, Psychological Studies, Management and decision science and so on. The largest stakeholders of Information Science are Information [Information Studies], Technology [Mechanical Engineering, Electronics and Communication Engineering], Computing [Computer Science, Information Technology, Information and Communication Technology], and User [common people, students, office workers, academician and others]. The main workplace of information science is includes Information foundations and which includes information centers, information networks, information systems, libraries and CIC, documentation centers, publishing houses, data grid and centers. Information Science is helpful for several development activities through its stakeholders.

II   OBJECTIVES

The main aim and objective of this study is includes:-

(a) To learn information science and its basic nature;
(b) To find out the origin of Information Science and its related domain;
(c) To find out main stakeholders of information science and their role in information infrastructure building;
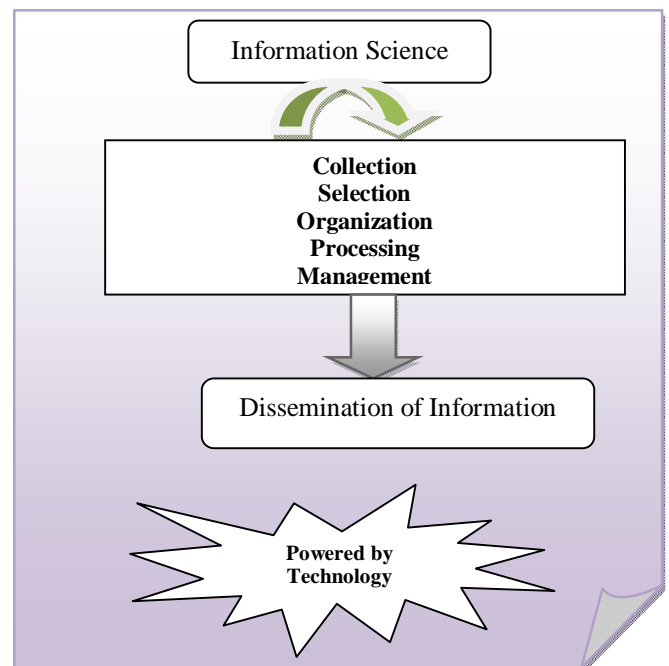(d) To learn basic on information science and its emerging trend and side by side role as a contemporary tool.

Fig: 1: Depicted basics of Information Science and its backbone

III INFORMATION SCIENCE: FUNDAMENTALS

Information Science is an interdisciplinary domain dedicated to study information; including its behaviors and nature. Information science is basically engaged in information activities like collection, selection, organization, processing, and dissemination. We know that information is most vital source and required for each and every type of institutions whether it is commercial, educational, political, communication.

Information science is an interdisciplinary domain incorporated with so many other domain related or connected with information and technology or helps in better information science practice. These subjects are including:-

  (a) Computer Science;
  (b) Information Technology;
  (c) Management Science;
  (d) Psychological and Cognitive Science and others.

Virtually the allied subjects are mainly helps to prepare better information designing and development.
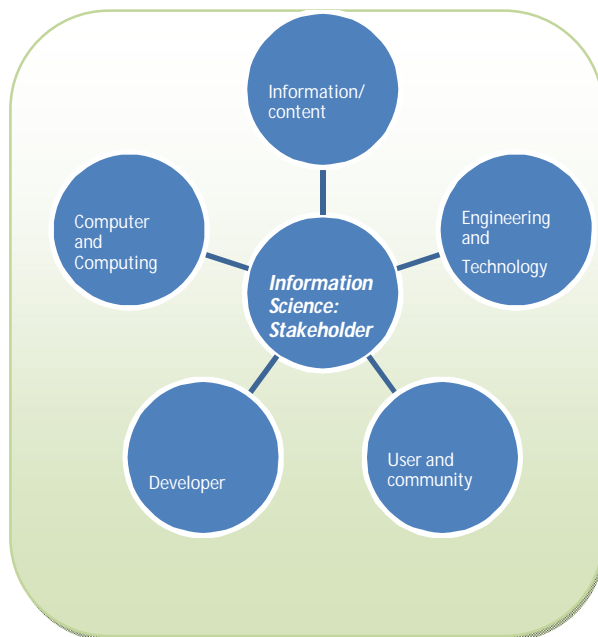

Fig: 2 showing main facets of Information Science

IV INFORMATION SCIENCE: ORIGIN

Finding out the actual origin of information science is controversial matter and many experts express different thought on various points. Some people think that it is actually wider area of library science and some computing expert claim that it is actually applied domain of computer science. Though, it is actually originated as information field and growing and integrated with other domains which are helpful for healthy information practice. Information science today integrates with several science and engineering domain.
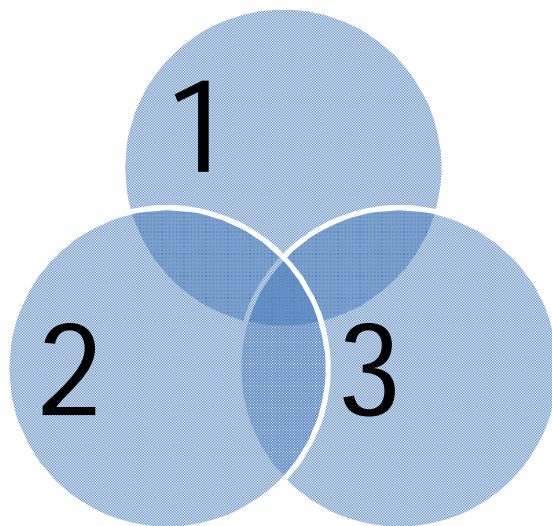
V INFORMATION SCIENCE: STAKEHOLDERS

The stakeholder of information science may be classified as follows:-

  (a) **Information, Knowledge and Resources: -** It is the most valuable facet or entities of information science as all about information and knowledge. The main material in information science is information or knowledge. All the enterprises need information and similar facet and information science is actually responsible for better information processing, management and side by side dissemination;

  (b) **Technologies like-** Electrical engineering, Mechanical Engineering, Communication Engineering: - It in information science is actually the technological and engineering tools and subject which promote better information transparency and make intelligent information systems. These tools are artificial intelligence, expert systems; which are useful in knowledge organization, selective dissemination of information, current awareness services, Enterprise Resource Planning, Business Intelligence, Information Analysis and so on; *Electrical and Electronics Sciences* is responsible for better information activities, which includes designing and development of Green Energy, efficient information entities like information centers, information networks, knowledge grids and whole information infrastructure. While **Communication Technologies** needed for healthy communication between information entities or information centers to information networks or within similar foundation. It is also involves in tele conferencing, virtual reality, virtual community and so on. Better information transparency, information channels are also possible with robust Communication Engineering applications;

  (c) **Computing-** which includes Database Management, Networking, Multimedia, Human Computer Interaction, Cloud Computing and so on: - It is the second largest facet or stakeholder of information science. Now a day for each and every task depends on computing and similar devices. These devices are *Database Technologies* [which is requires foe better data management and dissemination], *Data Mining* [which is helpful for finding required and unknown or hidden data at a time or when required], *Information Retrieval Systems* is required for preparation of a healthy and sophisticated

information system based on healthy recall and precision. *Networking* is needed for in house communication, *Cloud Computing* is required for saving money, time and extra devices and it is actually able to make a virtual world with online hardware and application packages; *ERP and Decision Support Systems* is helpful for information science's organizational client for their easy and quick decision and repost generation. *Multimedia Systems* are also helpful for better information practice and beautiful multimedia information systems building; which is applied both in information foundation and organization to display various statistics with information science. Similarly *Human Computer Interaction* is helpful tool for healthy information and community or people interaction. Here use of **Usability Engineering** is also helpful tool;

(d) **Users-** which includes general and common mass and specific users. Now let us discuss these stakeholders one by one: - Users are the third largest stakeholder of information science, responsible for utilization or use of information. General people always use information thus they are the largest group. Organizations, enterprises are the second information users. Information foundations are also a healthy and important user.

(e) **Management** is another tool which is needed for better information management and healthy utilization of information and simultaneously technologies;

1- **Information, 2- Technology, 3- Users**

Fig: 3- Depicted the role of Information Science as Information-Technology- Community interaction

VI INFORMATION SCIENCE AND INCREASING COMMUNITY

Virtually Information Science and its stakeholder are emerging day by day. Technologies like Cloud Computing, Green Computing, Usability Engineering and Human Computer Interaction, Intelligent Informatics are the latest name in Information Science.

Similarly, earlier Information Science was mainly restricted in Information foundations like information centers, libraries, Information and documentation centers, digital repositories, Information Analysis and Consolidation and so on. But today Information Science is using all most all the areas of society, whether Governmental house, political section, Communication Department and so on. Practically in all most all these department a separate Informatics unit has been established for better promotion of the concerned unit.

VII FINDINGS

(a) Information Science is an Applied Science field with humanities and social science touch;

(b) It includes Applied Science, Engineering, humanities, management; that means all most all the division of knowledge;

(c) Still more fields may exist where proper information utilization is possible;

(d) Correct Information Science practice brings healthy Information literacy and digital literacy.

VIII SUGGESTION

(a) Information Science programme need to be initiated in universities and higher educational institutes foe better information transparency;

(b) It helps in removing digital divide and information divide;

(c) Knowledge workers need to attach with current need of information science for better information practice.
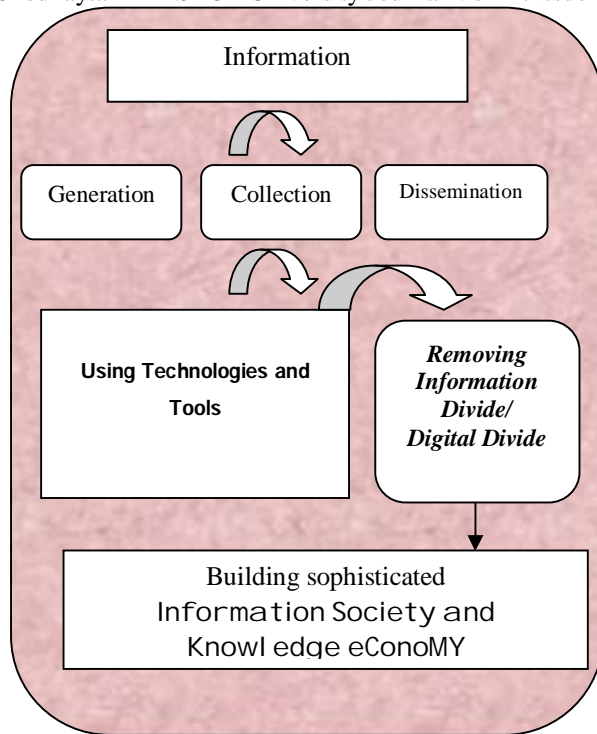
Fig: 4- representing how Information playing as important stakeholder of Societal development and the ultimate source as Information Science

IX CONCLUSION

Ultimately Information is consider as most vital tool foe development and require for the entire sector; be it education, institutions, governance, political parties. Thus healthy Information Science promotes better information repositories and keep oxygen of all most all profit making and nonprofit making organization and for keeping common people information and to move our society as Information Society.

REFERENCES

[1] Bangalore Declaration (2006): A National Open Access Policy for Developing Countries. Retrieved February 01, 2011 fromhttp://www.ncsi.iisc.ernet.in/OAworkshop2006/pdfs/NationalOAPolicyDCs.pdf

[2] Crow, Raym. (2002). The Case for Institutional Repositories: A SPARC Position Paper. Association of Research Libraries. Retrieved April, 2010 from http://www.arl.org/sparc/IR/ir.html.

[3] Directory of Open Access Repository (2011). Home page of DOAR. Retrieved January 21, 2011, from http://www.opendoar.org/countrylist.php?cContinent=Asia

[4] Johnson, R.K. (2002). Institutional repositories: partnering with faculty to enhance scholarly communication. *D-Lib Magazine*, 8 (11). Retrieved April 21, 2010, from http://www.dlib.org/dlib/november02/johnson/11johnson.html

[5] Roy, Mukhopadhay and Biswas (2011) 'An Analytical Study of Institutional Digital Repositories in India' Library philosophy and Practice, ISSN-1522-0222.

[6] National Knowledge Commission (2007). Report of the Working Group on Open Access and Open Educational Resources. New Delhi: National Knowledge Commission. Retrieved January 05, 2011 from http://knowledgecommission.gov.in/downloads/documents/wg_open_course.pdf

[7] Registry of Open Access Repositories (2011). Home page of ROAR. Retrieved January 21, 2011,fromhttp://roar.eprints.org/index.php?action=search&query=india

[8] University Grants Commission (2005). U*GC (Submission of Metadata and Full-text of Doctoral Theses in Electronic Format) Regulations.* Retrieved April 10, 2010 from www.ugc.ac.in/new_initiatives/etd_hb.pdf.

[9] Paul, Prantosh Kumar, Dipak Chaterjee and Bhaskar Karn "Cloud Computing: beyond ordinary Information Transfer Cycle" in National Conference on Computing and Systems, Dept of Computer Science, Burdwan University.,15 March,2012,Page-89-92

[10] Paul, Prantosh Kumar, B B Sarangi, Bhaskar Karn, "**C**loud **C**omputing: emphasizing its Facet, Component and Green aspect with special reference to its utilization in the Information Hub" in National Conference on Emerging Trends in Computer Application & Management,Faculty of Computer Application and Management, AVIT (AICTE-NBA Accredited Engineering College) Dated-24-02-12, 25-02-12. Paper published.

[11] Paul, Prantosh Kumar, Dipak Chaterjee and Bhaskar Karn "Cloud Computing: emphasizing its possible roles and importance in Information Systems and Centers" in IEM/IEEE sponsored international conference proceedings (IEMCON-12). P-345-348.

[12] Paul, Prantosh Kumar,Bibhuti Bhusan Bhusan Sarangi and Bhaskar Karn "Information Systems & Networks :Emphasizing issues and challenges of subject based ISN" **in** *IEEE* / *CSIR* sponsored- National Conference on Information and Software Engineering,AVIT ,VMU, 9-10 March. P. 154-158.

[13] Prantosh Kr Paul , K V Sridevi, "Information Science (IS) Education: Challenges, Issues and Opportunities in Indian context" in IJMEC, Vol 3 No. 2, Page- 87-93, July-Dec, 2012.

[14] Prantosh Kr. Pau1, K V Sridevi, "I Schools: An overview emphasizing need of versatile I-Programme in India: A Study" in IJESCE, Vol. 4 No. 2 , July-Dec-2012

[15] Prantosh Kr. Pau1, K V Sridevi, B B Sarangi, Ramanna Chetri, Roshan Rai "Community Informatics: Role, Values and Challenges emphasizing need as an Academic Specialization" in IJCSMA, Vol 6 No 3-4,Page-121-127,July Dec-2012

[16] Prantosh Kumar Paul, Minakshi Ghosh, S Govindarajan, K L Dangwal "Community Informatics: The Emerging Field and Dimension of Advance Informatics" in IJRDBMS, Vol 6 No. 2 Dec-2012, Page- 403-410

[17] www.en.wikipedia.org

[18] www.infosci.**cornell**.edu/

[19] *www.ischools.org*