

ICDL 2016

SMART FUTURE

Knowledge Trends that will Change the World

13–16 December 2016

IHC, New Delhi, India

CONFERENCE REPORT



Organizer



The Energy and Resources Institute

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1 Introduction



The International Conference on Digital Libraries (ICDL) 2016 was held from 13-16 December 2016 at the India Habitat Centre (IHC), Lodhi Road, New Delhi. Distinguished delegates working in areas of digital library, knowledge management, data and information science from across the globe gathered at 9 am on 13 December 2016 at the IHC Hub. The Conference was inaugurated by Ms Donna Scheeder, President of International Federation of Library Associations and Institutions (IFLA), USA on 13 December. Dr Ajay Mathur, Director-General, TERI & Conference Chair ICDL 2016 welcomed the dignitaries and delegates, which was followed by a special address by Mr Prabir Sengupta, Distinguished Fellow, TERI. The vote of thanks was proposed by Dr P K Bhattacharya, Fellow & Area Convenor, Knowledge Management Division, TERI and Organizing Secretary of the Conference.

In line with the theme of the conference, *Smart Future: Knowledge Trends that will Change the Future*, several government bodies, institutes, and companies announced their collaboration with TERI to embark on the digital journey.

The ICDL exhibition was inaugurated by Ms Donna Scheeder, President, IFLA, USA in presence of Dr Ajay Mathur, Director-General, TERI; Mr Prabir Sengupta, Distinguished Fellow, TERI; Prof Michael Seadle, Humboldt University of Berlin, Germany; and other experts.



The conference comprised 4 tutorials, 3 thematic workshops, 20 technical sessions, 13 special events and 3 plenaries. The conference was live streamed to reach out to wider set of audience globally.

2 Background

The world has seen an explosive growth in digital connectivity over the past few years, and knowledge trends over the coming years are expected to lead to even further expansion of communication and digital networks. Making adequate use of information, transforming it, and creating knowledge out of it requires competence and opportunity – both in terms of innovation and capacity development. Information and knowledge are, therefore, crucial assets of the knowledge economy. As custodians of knowledge in the digital age, libraries, data centres, information and knowledge centres have a pivotal role in driving organizational and societal innovation in the global knowledge society.

Being a front runner in research, TERI, through its library and knowledge management team, had initiated periodic workshops in the areas of electronic resource sharing, resource management, digital library development, and many such issues related to knowledge development. At the same time, TERI also started its knowledge management (KM) processes and in 2003, initiated development of KM platform in TERI. Upon receipt of positive feedback and professional demand, TERI library professionals conceptualized hosting an international conference in coordination with foreign and national experts, ministries, and decision and policy makers in India and abroad. The idea was to bridge the gap between India and other developed nations to address the challenges and opportunities with respect to digitization of resources.

The journey of ICDL began in 2004 with financial and intellectual support from the Ministry of Culture, Government of India. Several DL luminaries came forward and joined hands with TERI to make this event a grand success. The first conference was inaugurated by Hon'ble Dr A P J Abdul Kalam, the then President of India. The recommendations were submitted to Ministry of Culture for implementation. After evaluation of the poor state of public libraries in India, one of the recommendations was the allocation funds for developing the public library system in India. It triggered a large number of DL developments such as DL initiatives by the Indian government and several national/international events in India, aimed at bridging the digital divide between the developing and developed countries. It also provided a platform to enable interaction among DL amateurs and experts.

Seeing overwhelming responses from all corners — government, librarians, and publishers — ICDL was repeated in 2006, 2010 and 2013. Since the beginning, ICDLs were fortunate to receive support of Indian government, online publishers, renowned speakers, organizations, and participants. In the last three ICDLs, speakers have been invited from over 25 countries.

2.1 Glimpses of Past ICDLs

Year	Theme	No. of Speakers	No. of Participants
February 2004	Knowledge creation, preservation, access, and management	55 speakers invited from 16 countries	750 participants from 36 countries

December 2006	Information management for global access	45 speakers invited from 17 countries	600 participants from 35 countries
February 2010	Shaping the information paradigm	47 speakers invited from 17 countries	600 participants from 40 countries
November 2013	Vision 2020: Looking Back 10 Years and Forging New Frontiers	40 speakers invited from 16 countries	533 participants from 9 countries

ICDLs, over the last 10 years, took center stage as a platform to promote DL research and bridging the digital divide, among DL enthusiasts, as it received participation from across the globe. All the past ICDLs have received over 600 participations across the globe and have been recognized as one of the premier international DL conferences. ICDL is a major international platform focusing on the knowledge trends and associated technologies, tools and processes that are critical to meet new challenges and opportunities in the digital era.

2.2 Major Recommendations of Past ICDLs

2004	2006	2010	2013
<ul style="list-style-type: none"> •Policy-makers to take initiatives in standardization of metadata, interoperability Copyright issues •Development of a document of multidisciplinary task force •Preservation of cultural and literary heritage of India •Around 2.50 billion earmarked for digitization of 1.5 million documents within a period of 3 years 	<ul style="list-style-type: none"> •Enact Digital Library Act •Establish consortia for content creation •Democratization of information •Capacity- and capability-building in digital library •National Digital Library Policy •Digital India Initiative (DII) •Setting up of apex body for the development of DL in the country 	<ul style="list-style-type: none"> •Re-emphasizing the need for enacting Digital Library Act •Re-emphasizing the need to evolve National Digital Library Policy •Capacity- and capability-building through public and private sector partnerships •Harness digital library technologies for e-learning and open distance learning 	<ul style="list-style-type: none"> •Integrating digital libraries on a common platform for comprehensive access •National Digital Library Platform that nations can adopt towards digital deposit legislation •Commission a national survey to assess the status of digital libraries' development in developing countries •National governments should fund and support policies and programmes for digital library development •Developing 2nd and 3rd Generational Digital Libraries

Predicting the future, better preparing for the future and taking requisite actions to apply this knowledge to create the future — these were the three strategic objectives of ICDL 2016. The conference has succeeded to uncover, through its various sessions and programmes, the processes related to these issues. Having the strategic knowledge about the key trends that will shape our future will enable the stakeholders to achieve success and make a difference in their respective spheres of activities.

3 Conduct of the Conference

3.1 Conference Theme

The theme of ICDL 2016—*Smart Future: Knowledge Trends that will Change the Future*—provides a futuristic outlook about understanding, visualizing, and exploring the possible scenarios of the interconnected knowledge generating activities. ICDL 2016, the fifth in ICDL series, aimed to provide a global forum for sharing of experiences among researchers, educators, practitioners, and policy makers from a wide range of disciplines such as library and information science, information and communication technology, archival and museum studies, knowledge management, data analytics and social media.

In addition to aspects of digital library research and development, ICDL 2016 focused on associated emerging disciplines and cutting edge topics such as:

- Role of information to meet Sustainable Development Goals
- Innovation and knowledge management
- Social media and analytics
- Big data and analytics
- Internet of Things (IoT)
- Open data, Research innovation, among several others.

The three strategic objectives of the conference, include predicting the future, preparing for the future and, finally, taking requisite actions to apply this knowledge to create, what is being called the ‘Smart Future’.

3.2 Organization

A number of committees viz. Advisory Committee, Steering Committee, Programme Committee and Organizing Committee were constituted for the purpose of guiding, preparing for and conducting the conference. The details of all the committee members are provided in Appendix ‘A’

3.3 Preparation

Preliminary preparations for the conference commenced in October 2015. The members of the Programme Committee approved the structure to be adopted for the conference in the form of keynote addresses, tutorials and workshops, technical sessions, panel discussions, poster presentations, and exhibitions.

3.4 Programme

The conference was conducted from 13-16 December 2016. A brief outline of the ICDL 2016 programme is provided below:

Date	Session
Day 1: 13 December 2016	Tutorials, Conference Inauguration, Exhibition Inauguration, Special Event
Day 2: 14 December 2016	Plenary, Conference Sessions, Workshop, Special Events, Poster Presentations, Exhibition, Cultural Programme, Conference Dinner
Day 3: 15 December 2016	Plenary, Conference Sessions, Workshop, Special Events, Poster Presentations, Exhibition, Cultural Programme, Conference Dinner
Day 4: 16 December 2016	Plenary, Conference Sessions, Workshop, Special Events, Exhibition, Valedictory Session

The conference comprised 4 tutorials, 3 thematic workshops, 20 technical sessions, 13 special events and 3 plenaries (Figure 1).

The details of the conference programme are attached as Appendix `B`.

12 *Opinion Polls* were conducted during the sessions to ascertain the views of the participants on topical issues. The participants, including online viewers who participated in the conference through live streaming, took part in the polls. The opinion poll questions and results are detailed in the respective sections in this report.

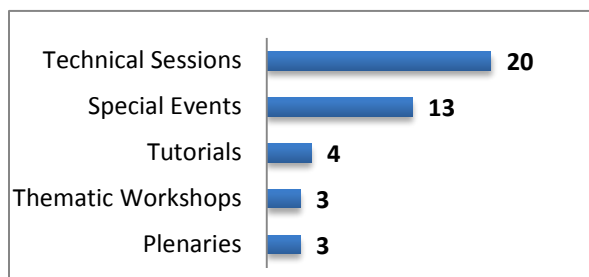


Figure 1. Conference Programme

3.5 Participation Fee

The participation fee for the conference is given below:

	Registration Fee	
	India (INR)	Other countries (USD)
Conference	6000	200

Conference, Tutorials & Special Events	7000	250
Tutorials or Thematic Workshops	3000	50

The delegates who registered before 30 October 2016 availed an early bird discount of 15% on the registration fee.

3.6 Participation



The conference had 147 invited speakers (including session chairs) from 19 countries including India and over 540 registered participants and collaborators which included more than 100 participants from 11 countries from Asia, Africa, Europe, Australia and United States of America. Participants, who attended the ICDL 2016 conference, were provided with certificates (Figures 2 and 3).

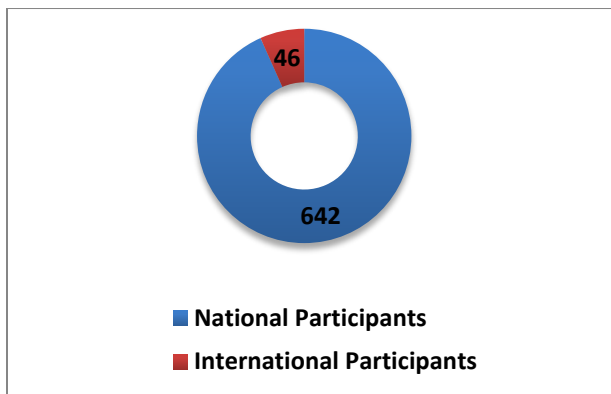


Figure 2. ICDL 2016 Participants: Demographic profile

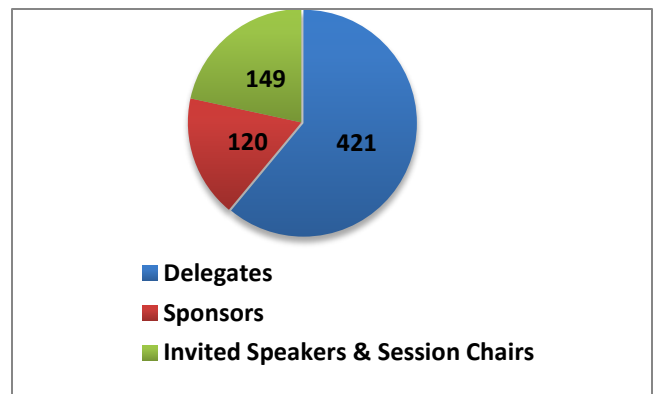


Figure 3. ICDL 2016 Participants: Category profile

3.7 Live Streaming

The *Special Events* (at Stein and Silver Oak halls) and *Thematic Workshops* (at Juniper hall) were streamed across the globe to reach to stakeholders who are unable to physically attend the conference. Viewers could actively interact with the speakers and participate in the sessions. Questions raised by the viewers were addressed by the chairs and co-chairs of the respective sessions. The conference was live streamed across the globe and was viewed by over 6000 stakeholders from 25 countries including India.



The summary of viewers' statistics for the four days of the conference is given below.

	13 December 2016	14 December 2016	15 December 2016	16 December 2016
Page views	685	2551	1691	1360
Unique page views	295	827	608	500

Apart from India, viewers from the following 24 countries accessed the webcast proceedings.

Bangladesh	Hong Kong	Saudi Arabia
Botswana	Italy	Singapore
Brazil	Japan	Spain
Canada	Jordan	United Arab Emirates
Czech Republic	Kyrgyzstan	United Kingdom
Egypt	Mexico	United States
Fiji	Netherlands	Vietnam
Germany	Pakistan	Zimbabwe

4 Joint Advisory, Steering and Programme Committee Meeting



A Joint Meeting of the Advisory, Steering and Programme Committees was held at TERI, New Delhi on 24 November 2016. The meeting was held to apprise the members of the committees about developments related to ICDL 2016 and invite their views and suggestions for the smooth functioning of the event.

Mr Prabir Sengupta, Distinguished Fellow, TERI welcomed all the esteemed members and chaired the open session. Dr P K Bhattacharya, Organizing Secretary, 2016 gave a detailed presentation on the preparations of the ICDL 2016. Several members gave useful suggestions for ensuring the continued planning, implementation, and conduct of the conference.

5 Conference Inauguration

5.1 Welcome address



The Inaugural Session of ICDL 2016 was held on 13 December 2016. Dr Ajay Mathur, Director-General, TERI, while underscoring the importance of national approaches to managing knowledge, especially through the adoption of new digital technologies in this digital era, said that the core objective of the International Conference on Digital Libraries (ICDL) 2016 conference is to discuss perspectives on how planning for smart cities and other important aspects of our emerging urban lives must factor in the increasingly crucial role played by sophisticated and appropriate ICT tools and software services to intelligently manage, analyse and predict, how our smart future could look like. This will ensure how countries and their institutions plan and build entirely new ecosystems in areas such as public security, air quality and pollution, public health environmental sustainability, socioeconomic innovation, participatory governance, better public services, planning and collaborative decision-making.

5.2 Special Address



Addressing the session, Mr Prabir Sengupta, Distinguished Fellow and Director, Knowledge Management Division, TERI, explored the different services provided by the TERI Knowledge Management Division and their value in research being conducted at TERI. Mr Sengupta noted

that during the past few decades the ICT application has changed life of the people in every sense, made people even smarter in handling situations, data, and taking decisions.

5.3 Inaugural Address



Delivering the Inaugural Address, Ms Donna Scheeder, President, IFLA, USA, touched upon some critical issues in digital arena and its impact on the modern society permeating every sector of human life. She emphasized on the need for reducing the digital divide in developing and developed societies so that fruit of digitization may reach all. Ms Scheeder described as to how IFLA launched the IFLA Trend Report some time back and identified five key trends in society that are having major impacts on the libraries and access to information and knowledge. She further stated that libraries, especially digital libraries, are truly at the heart of knowledge societies; they enable people to accomplish their goals.

“IFLA believes that increasing access to information and knowledge across society assisted by the availability ICTs, supports sustainable development and improves peoples’ lives.”

Ms Donna Scheeder, President, IFLA
INAUGURAL SESSION, ICDL 2016

Please see Appendix `F’ for the full inaugural address by Ms Donna Scheeder.

5.4 Vote of Thanks



Dr P K Bhattacharya, Fellow and Area Convenor, Knowledge management Division, TERI and Organizing Secretary, ICDL 2016 presented an overview of the programme stating its twin objectives as innovation in digital knowledge driven services and solutions and bringing digital divide to improve the lives of people in the developing world. Dr Bhattacharya thanked the institutions, organizations, and individuals for their support in the run-up to the ICDL 2016.

6 Tutorials

A total of four tutorial sessions were conducted on 13 December 2016 in four parallel sessions.

6.1 Creation and Utilization of OER for Higher Education (Tutorial T1)



By Prof. Vunnam Venkaiah Former Vice-Chancellor, Krishna University, Hyderabad, India; Mr R Thyagarajan Head, Administration and Finance, Commonwealth Educational Media Centre for Asia (CEMCA), New Delhi, India; Dr Manas R Panigrahi, Programme Officer -Education, CEMCA-COL, India

Mr R Thyagarajan gave the introductory and welcome address. In his introductory address he highlighted the objective of the tutorial on Open Education Resources (OER).

Prof. Vunnam Venkaiah gave presentation on “Creation and Utilization of Open Educational resources for Higher Education”. In his presentation he highlighted the following issues:

- Changing university’s research and teaching roles
- Emerging trends in OER (Open Education Resources) and OA (Open Access)
- Role of International Development Agencies/Institutions
- Addressing policies for creation and sharing of quality OER
- Quality Assurance and TIPS Framework

Dr Manas R Panigrahi gave presentation on “Understanding and Creating OER: An Innovative Intervention in Open and Distance Learning (ODL)”. In his presentation he highlighted the role of teachers in learning and promoting OER and also provided the tips and guidelines for creating OER

The session also focused on UNESCO’s recommendations to Institutions about avoiding duplication of work/efforts/technologies. National Knowledge Commission has also recognized the role of OER to upgrade the quality of education. Some important issues highlighted during the session included value for money, value addition, and freedom to use and expand in context of online educational resources.

6.2 Information Discovery Using Search by Image (Tutorial T2)



By Prof. Paul Nieuwenhuysen , Vrije Universiteit Brussels, Belgium

This tutorial workshop was based on a continuing investigation of the power, applicability, and usefulness of search by image through the Internet. It demonstrated retrieval of semantically similar images, their copies, as well as modified versions. The tutorial recommended information and media literacy in this area. Prof. Paul Nieuwenhuysen started his lecture by talking about inserting images in a search queries and how one can do this professionally.

Prof. Nieuwenhuysen stated that search by image is evolving to a powerful, additional method to tackle information needs that are difficult to handle with more classical methods. Furthermore, using a combination of text and an image in a query can increase the precision of the search results in comparison with a more classical pure text search or with a simple, pure search by image.

6.3 Application of R-Software in Big-Data Analytics (Tutorial T3)



By Dr Moonis Shakeel , Associate Professor, Jaypee Business School, Noida, India

Dr Moonis Shakeel 's tutorial session focused on R software which is a free software environment for statistical computing and graphics. It compiles and runs on a wide variety of UNIX platforms, Windows and MacOS. R is an integrated suite of software facilities for data manipulation, calculation and graphical display. It includes

- an effective data handling and storage facility,
- a suite of operators for calculations on arrays, in particular matrices,
- a large, coherent, integrated collection of intermediate tools for data analysis,
- graphical facilities for data analysis and display either on-screen or on hardcopy, and
- a well-developed, simple and effective programming language which includes conditionals, loops, user-defined recursive functions and input and output facilities

Dr Shakeel demonstrated how R-software may be the right solution to perform statistical computing, data manipulation, graphical display, and other related actions. R is an open-source programming language that is freely available on the worldwide web. It has package of 7K libraries in CRAN (Comprehensive R Archive Network). It contains its own statistical algorithms and could be linked to C, C++, FORTRAN, Java Script, and Python programming languages.

6.4 Big Data Analytics on Visualize Quasi-Structured Data and Semi-Structure Data (Tutorial T4)



By Mr Shanmughavel Somu, Senior Manager (IT) - Training & Research, ICT Academy, India

Mr Shanmughavel Somu initiated his talk with few things which we can do in real time. He talked about big data from different perspectives, like industry, business, etc and what technology we can adopt to visualize this big data such as Hadoop. The tutorial showed how Hadoop may calculate return of investment and generate the stats. Also, for intensive data analysis, Hcatalog, HDFS, Microsoft Excel with ODBC drivers, and Apache Zeppelin may be used

Mr Somu covered following points in his talk:

- how an online retailer can optimize buying paths to reduce bounce rate and improve conversion for analyzing we will be using the large data sources such as web logs.
- By combining web logs with more traditional customer data, we can better understand the customers, understand how to optimize the promotions and ads for the Business.
- how to consume clickstream data into HDFS, then use HCatalog to create tables and perform queries on those tables with Hive to analyze the web logs from that data.
- how to perform web log analysis on clickstream data, so we can better understand the habits of our customers.

Technology Used

- Hcatalog to build a relational view of the data.
- Hive to refine the data stored in HDFS.
- Using Microsoft Excel with ODBC Drivers for Apache Hive We can import the data from HDFS.
- Visualizing the Data with Apache Zeppelin.

Understanding Hadoop

- Framework for solving data-intensive processes

- Designed to scale massively
- Very fast for very large jobs
- Variety of processing engines
- Designed for hardware and software failures

7 Plenary Sessions

7.1 Plenary Session I, 14 December 2016



Keynote Address by Ms Donna Scheeder

The *Keynote Address* by Ms Donna Scheeder, President, IFLA, was chaired by Prof S B Ghosh, Emeritus Professor, Indira Gandhi National Open University, India. Ms Scheeder covered several issues related to information and IFLA's guidelines to make information available freely. She suggested bridging the gaps to provide information in Indian perspective. She further observed that librarians are skilled information professionals. She mentioned the trend reports brought out by IFLA which deal with how citizens can benefit from the information and knowledge and help in building a knowledge society. She elaborated about privacy and data protection in the global world. She talked about speech recognition, language translation/ recognition tools, 3D printing technology, and how libraries can contribute towards removing barriers in access to information.

Ms Scheeder asserted the role of national and global information policies in which role of library associations is crucial.

The following *Opinion Poll* was conducted at the end of the session.

Opinion Poll I: The central factor and guideline that governs the overall concept of the Smart Future Initiatives is:

The options were:

- A. Keep the Technology in the Loop
- B. Keep the Human in the Loop
- C. Keep the Innovation in the Loop

The voting pattern of all participants (including the online viewers) reveals that keeping humans (workforce) and innovation in the loop are the central factors that govern the concept of Smart Future Initiatives with 34.8% of the respondents voting in favour of each Options B and C (Figure 4`).

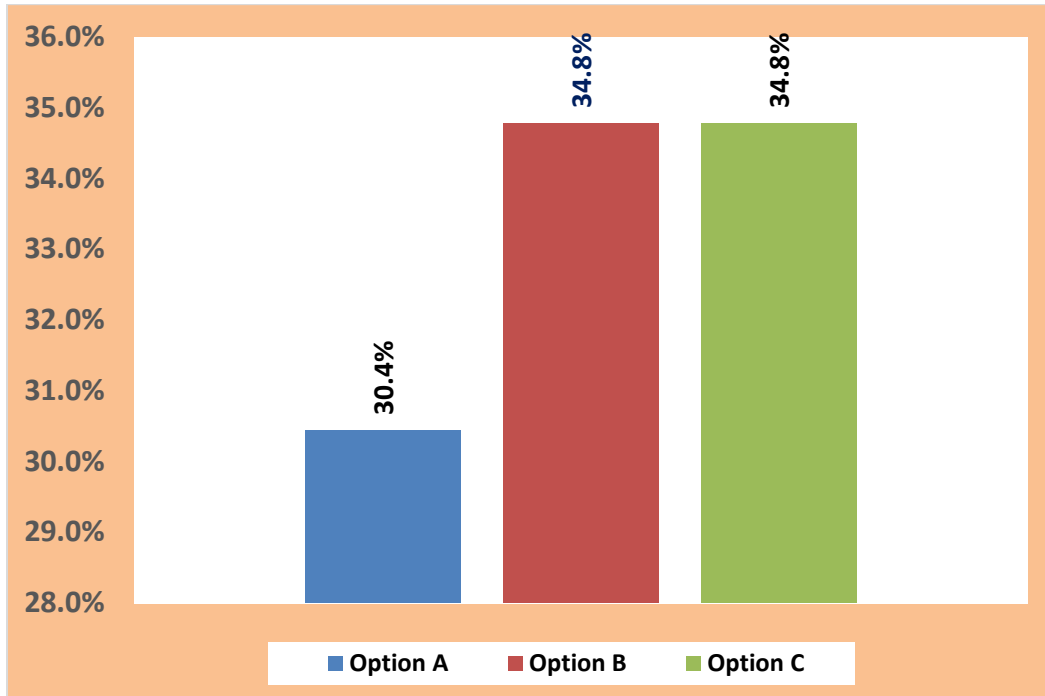


Figure 4. Opinion Poll I

7.2 Plenary Session II, 15 December 2016



Keynote Address by Mr Shrikant Sinha

The *Keynote Address* by Mr Shrikant Sinha, CEO, NASSCOM Foundation was chaired by Dr Ajay Mathur, Director-General, TERI. In his Keynote Address, Mr Sinha captured the process of digital transformation in society and explored how libraries have reached users on their desks. He talked about empowering the power giving example of mobile phone's usage and importance in day-to-day activities. He further talked about the digitization, disintermediation, mobilization, screenfiction, intelligization, automation, virtualization, anticipation, prediction, re-humanization, etc. He gave the idea of smart diamond to define smart cities and explained the smart governance, smart energy, smart buildings, smart healthcare, smart citizen, etc. Mr Sinha also expressed the idea of waste management system and emphasized on e-waste management. During his presentation, he showed various facts and figures about the digital literacy mission

7.3 Plenary Session III, 16 December 2016



Plenary Session: Role of Information in meeting SDGs

The Plenary Session III focused on the ***“Role of Information in meeting SDGs”***. The session was chaired by Ms Donna Scheeder, President, IFLA and co-chaired by Dr R K Sharma, Librarian, United Nations Information Centre, New Delhi. Ms Geeta Malhotra, Country Director, READ India stressed on the pivotal role of libraries can play to highlight the importance of SDGs for the benefit of all stakeholders. Ms Amarjeet Kaur, Former Director, National Library Board, Singapore highlighted the Singapore Libraries efforts in supporting the SDGs. Mr Yashvir Singh, Economic Adviser, Ministry of Environment, Forests and Climate Change, Government of India, emphasized the importance of Government Information Systems for disseminating relevant information required for achieving SDGs. Mr Singh also mentioned the role of ENVIS Centres implemented by the Ministry of Environment, Forest & Climate Change, Government of India, in integrating country-wide efforts in environmental information dissemination to all concerned.

The following Opinion Poll was conducted at the end of the session.

Opinion Poll II: Progress and realization of the UN Sustainable Development Goals will greatly depend upon recognizing the immense role of Libraries as:

The options were:

- A. Providing information literacy and capacity development programmes
- B. Increase access and dissemination of relevant information
- C. Facilitate and provide forums for connection and collaboration with stakeholders

The voting pattern of participants revealed that Options A and B received maximum support from the respondents (Figure 5). Providing information literacy and capacity development programmes as well as increasing information access and dissemination are crucial for progress and realization of the UN Sustainable Development Goals.

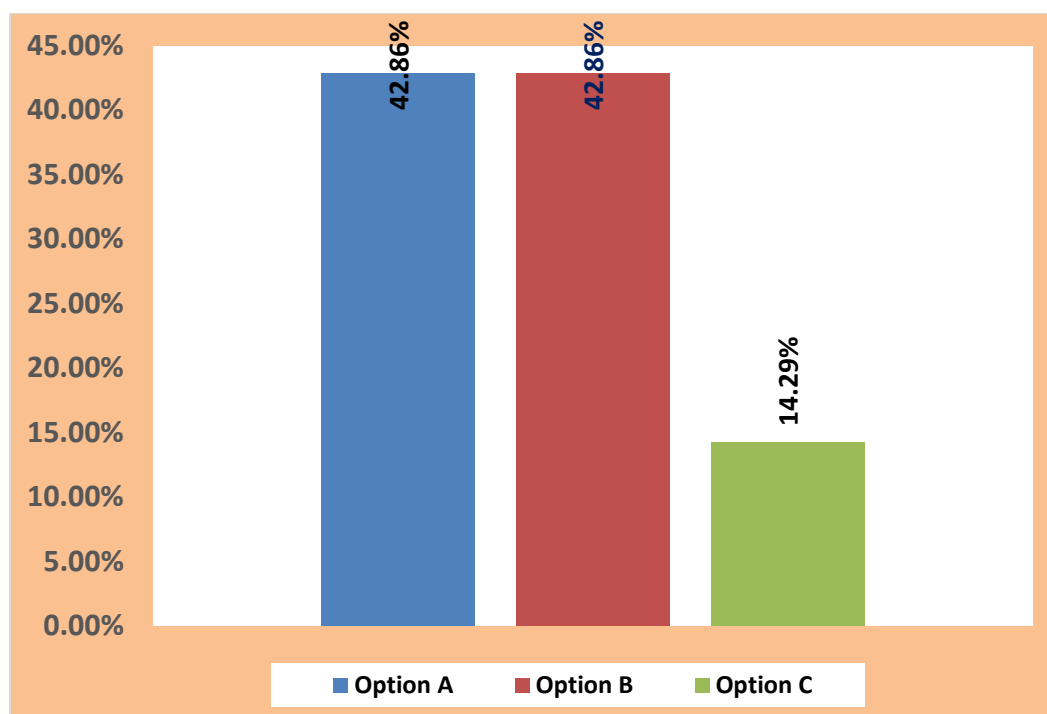


Figure 5. Opinion Poll II

8. Technical Sessions

Invited and Guest Speakers

A total of 21 papers were presented by invited speakers during the conference. 12 guest speakers presented their papers during the technical sessions. The details of invited and guest speakers and papers presented by them are given in Appendix 'G'.

Contributed Papers

The first call for papers was sent in May 2016 and the last date for submission of these papers was 20 October 2016. A total of 132 papers/abstracts were received. These papers were reviewed by members of the national and international programme committee members and a total of 63 papers were short-listed for presentation during the conference. Finally, 45 contributed papers were presented by the respective authors during the technical sessions. A Paper Award Committee was also constituted to confer three best paper awards. The details of the papers shortlisted for presentation during the conference are given in Appendix 'H'.

A total of 20 technical sessions were held from 14-16 December 2016. These sessions took place at 4 conference halls.

8.1 Digital Library - Development, Architecture and Management (Session 1A), 14 December 2016





The session was chaired by Dr H K Kaul and co-chaired by Dr R N Malviya. The invited speaker, Dr Shalini Urs spoke about the participatory approach based engagement of user in development of library collections. She also spoke about content based marketing strategy and application of social media to track user engagement. The guest speaker Dr M Madhusoodhan discussed user perspectives and institutional strategies for digital libraries. He highlighted the elements, nature and components of digital libraries.

Mr Bijoy Ketan Panda presented a contributed paper titled “Digital Marketing of Services and Products in Library and Information Center”. Ms Shubhada Apte presented the contributed paper on practices of achieving effective customer relationships using extended and smart outreach activities. Ms Reeta Sharma presented the paper on development of digital repository of the National Science and Technology Management Information System (NSTMIS), Department of Science and Technology, Government of India by TERI.

8.2 Digital Literacy: Standards and Policy (Session 1B) , 14 December 2016





Chairing the session, Dr Jagdish Arora spoke on E-PG Pathshala, Massive Open Online Course (MOOC), other open learning tools for digital literacy, and observed that e-content would be available in open access through a dedicated Learning Management System as well as through Sakshat Portal. The session was co-chaired by Mr Sanjay K Bihani. The guest speaker, Dr Bablu Sutradhar, highlighted digital literacy programmes by various organizations, such as NCERT, NEUPA, INFLIBNET, NDL, etc. Dr Dillara Begum presented the paper on digital library network of South Asia with a focus on free and open source software (FOSS) movement. Dr Begum discussed about several open source software specially Greenstone Digital Library Software in South Asian Countries. Dr M Abu Sayed spoke on information management and knowledge for development in public policy.

Ms Sanasam Sandhyarani Devi presented the contributed paper on development of digital library and users perception in Manipur University. Mr Sushant Kumar Panigrahi presented his study on digital authentication systems and remote access to e-resources.

8.3 Transformation towards Smart Libraries (Session 1C), 14 December 2016





The session was chaired by Dr Subhangi Sharma and co-chaired by Ms Priya Rai. The invited speaker Mr Kristian Jensen spoke about Heritage Made Digital programme which aims to make heritage digitally available. He also discussed about other programmes including Save a Sound and Enhancing our National Reach. Dr Ramesh Gaur, in his presentation, emphasized the need of libraries to redefine its role and come up as smart libraries with smart librarians equipped with emerging tools and technologies.

Mr Patrick Vanden Berghe presented the contributed wherein he discussed about library transformation to user oriented information through Delphi project. His study revolved around customer service philosophy and online tools, for instance “Bronnenwijzer”, which helped library staff to reach the library users. Mr B P Singh’s contributed paper dealt with refocusing digital information services using Quick Response (QR) Code that is cost effective powerful tool to manage and deliver digital information services in libraries. Ms Monika Verma presented the contributed paper on future of libraries in the intelligent web era that highlighted the concept of Web 3.0, its application and impact in the digital world.

The following Opinion Poll was conducted at the end of the session.

Opinion Poll III: *How do you transform your library to a smart one?*

The options were:

- A. Forward looking and being strategic
- B. User centric, technology driven, accessible anytime from anywhere
- C. Reaching out to users wherever they are

The voting pattern of all participants (including the online viewers) revealed that over 68% respondents are in favour of user centric and technology driven libraries being the need of the hour (Figure 6). Options A and C received 15.8% votes each.

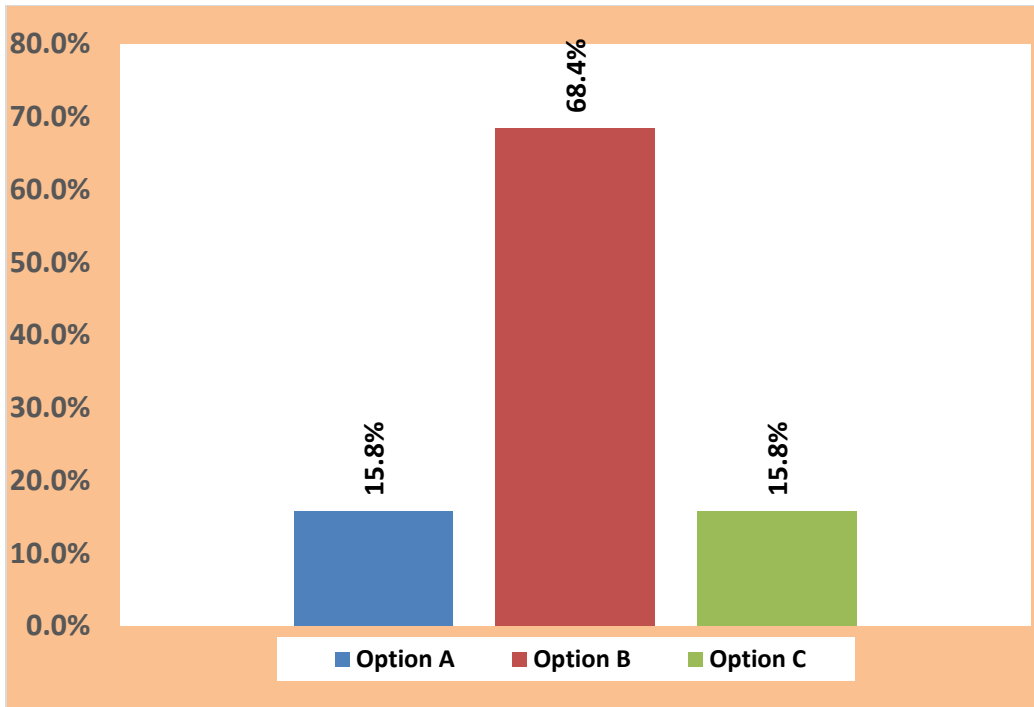


Figure6. Opinion Poll III

8.4 Collaborative Knowledge Creation Crowdsourcing (Session 1D) , 14 December 2016



The session was chaired by Dr Kavi Mahesh and co-chaired by Mr Praveen Babbar. The invited speaker Prof. Atsuyuk Morishima spoke about “The Hondigi/L Crowd Joint Project: A Microtask-based Approach for Transcribing Japanese Texts” which is a nationwide digital library cloud sourcing in Japan. Prof. Morishima also spoke about L-Cloud, Crowd4U (platform for Non Commercial, Public and academic) and Handigi (transcribe –JP). Dr Kalyan Bhattacharjee, in his talk, referred to crowdsourcing and compared the growth pattern in traditional environment to the modern social media environment.

Mr Martin Kesselman presented the contributed paper titled “Collaborations of Scientists & Academic Librarians in the Digital Knowledge Environment: Past, Present, and Promise” Mr Naushad Ali presented the paper on behavioural mechanism of knowledge sharing pattern among research scholars. Mr Pralhad Jadhav presented the paper on Personal Knowledge Management (PKM) Framework.

8.5 Panel Discussion on LIS Education at the Crossroads (Session 2A), 14 December 2016



Chairing the panel, Prof Gobinda Chowdhury suggested an i-school-based structure for LIS education. Dr Uma Kanjilal reviewed SWOT analysis and suggested a revamp of the curriculum. Dr Shalini R Urs emphasized on promoting reading habits among LIS professionals to build curiosity and quest of knowledge. She insisted to privilege the scholarship education which will enhance the level of learning among LIS students. Prof. Paul Niewenhuisen recommended ICT

literacy and diversity in education curriculum for LIS education. Dr Dilara Begum explored the LIS schools and education system in Bangladesh and information literacy.

The following *Opinion Poll* was conducted at the end of the session.

Opinion Poll IV: For Access to Education, LIS education through ODL mode, what measures should be adopted to maintain quality.

The options were:

- A. Stringent norms/standards/guidelines by University Grants Commission/Ministry of Human Resources Development
- B. Establishment of National Council of Open and Distance Learning
- C. Full Flexibility and Open access to education

The voting pattern of participants (including the online viewers) revealed that 45% respondents are in favour of stringent norms and guidelines being issued by government (Figure 7).

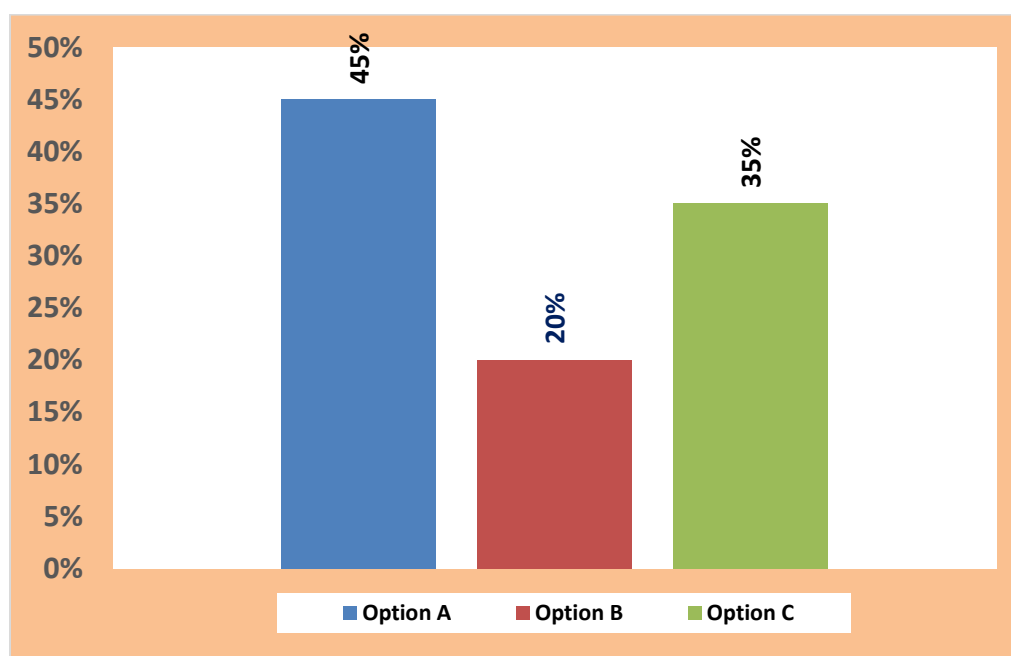


Figure 7. Opinion Poll IV

8.6 Knowledge Management Models and Applications (Session 2B), 14 December 2016



The session was chaired by Dr S Majumder who spoke about knowledge management models and applications. The session was co-chaired by Mr Mayukh Roy Chowdhury. Mr Kavi Mahesh, the invited speaker of the session, focused on knowledge management tools and technologies and explained the importance of analytics of knowledge management in today libraries. The guest speaker, Mr Kishore R Ingale, spoke about big data applications and the challenges in applications by using analytics in libraries.

Mr Somayya Madakam presented his contributed paper on Technological Publication Process System and how the process helps the research scholars. Mr Ashtosh G Joshi presented his study on the growth of Mahindra Research Valley from a small library to knowledge resource centre and the transformed from print to digital resource centre. Mr G Rathina Sabapathy talked about the analytical study on Krishikosh Institutional repository of National Agricultural Education and Research System of India.

8.7 Big Data and Data Visualization (Session 2C), 14 December 2016



The session was chaired by Dr Parveen Arora and co-chaired by Dr N K Wadhwa. The invited speaker, Mr Matthias L Hemmje, spoke about Active Data Management Planning—opportunities and challenges. He gave an overview about *Realizing an Applied Gaming Ecosystem* (RAGE) along with problems, challenges, goals, and various methodology uses for the Big Data Project. Dr Usha Mujoo Munshi defined big data application and reuse of the data. She explained how to create, harmonize the structured and unstructured data for future dissemination and about the role of the librarians who are to be at par with the corporate world in policy decision-making.

Mr Md. Nasiruddin presented his contributed paper on digital school libraries in Bangladesh. Ms Zeba Khanam presented her paper on big data management. Ms Geetanjali Bihani presented her paper titled “Smart Cities: Envisioning through Big Data Analytics”.

8.8 Digital Library Case Studies and Best Practices (Session 2D), 14 December 2016



Chairing the session, Mr M Madhusudhan, spoke about the merits and demerits of the digital library and its implications. Dr Tairq Ashraf co-chaired the session. Dr Maria Gaeda presented the paper titled “Multilingual Access to digital libraries -- the Europeana use case”. She discussed about multilingual access to digital libraries, Europeana platform, Europeana Data Model, Europeana Portal and multilingual searching and browsing. Dr Nalini Mahajan spoke

about tremendous changes and technological advancements that are transforming the entire healthcare industry. She discussed the current trends such as virtual care management, telemedicine, social Media, patient-centered care and electronic health records.

Ms M P Rajapaksha presented the contributed paper on use of web based library services by undergraduate students. The case study of the Faculty of Arts, University of Colombo, focused on the use web based library services by undergraduate and the frequency of their visits to the library website. Mr Usman A Adam discussed about the public access computers (PACs) in academic libraries. He showed that access to the internet and library catalogue, etc., was the major purpose of the PACs. Ms Arati Desai, in her paper presentation, discussed about the infrastructure of the Nehru Centre Library.

8.9 Digital Curation & Preservation of Indigenous Knowledge (Session 3A), 15 December 2016



The session was chaired by Dr Ramesh Gaur and co-chaired by Dr Md. Nasiruddin. The invited speaker, Mr Hadar Miller, spoke about the journey from metadata to data search and discovery from print to digital for National Library of Israel from 2010 to 2016. The second invited speaker of the session, Mr Tom Derrick, spoke on unlocking India's printing heritage through innovative digital research of 22 South Asian languages and his experience of converting 4000 manuscripts in British Library. The guest speaker, Ms Heather Brown, talked about integrated framework for disaster plan to safeguard for library collections. She said that the *IFLA Disaster Preparedness Guidelines* help to safeguard the heritage collections of Indian libraries.

Mr G Rathina Sabapathy talked about Sahitya Sagar, a digital repository of Sahitya Academy Library of Indian literature build up using DSpace. Mr Nadim Akhtar Khan spoke about the digital library development of traditional Kashmiri music by collecting data of audio and video including the biographies of singers and artists from Doordarshan, Kashmiri radio, art and cultural associations of Kashmir.

8.10 Data Science (Session 3B), 15 December 2016



The session was chaired by Dr Usha Mujoo Munshi and co-chaired by Dr Ashutosh Mishra. Prof. Gobinda Chowdhury gave an overview on Research Data Management (RDM). He explained about the challenges to make data available for future use. Prof. Chowdhury emphasized on data literacy and the important role played by universities in promoting data literacy. Prof. Jean Marc Comment defined open government, data strategy, and the situation of open data in Switzerland. He also discussed the role of libraries and archives to participate in implementation of Central Public Platform.

Ms Pushpita Mishra presented the contributed paper on “Application of Open Source Solutions for Digital Asset Management: A Case Study of NIT Rourkela”. She discussed about the various open source solutions like EPrint, DSpace, Joomla, Koha etc. used for digital preservation and dissemination of knowledge worldwide. Ms Barnali Roy Choudhury presented the paper on “Developing Institutional Open Educational Resource Repository in Open & Distance Learning Environment: A Model for Netaji Subhas Open University Based on Open Source Software” The paper focused on developing an institutional Open Educational Resource (OER) repository for learner’s community of Netaji Subhas Open University to ensure inclusive and equitable quality education opportunities. Ms Azra Aftab presented the paper on “Evaluation of Major Digital Libraries based on DigiQUAL Protocol”. She evaluated five major digital libraries (both Indian and International) from the user’s perspective using DigiQUAL protocol. Assessment of digital libraries is important to understand their current situation and then to implement the necessary measures for their improvement so as to enable them to cater to the needs of its users and to accomplish the objectives of their parent organization.

8.11 Information Storage and Retrieval (Session 3C), 15 December 2016



The session started with introductory remarks on information storage and retrieval by the Dr Alejandro Bia, Chair of the session. The session was co-chaired by Dr Nabi Hasan. The invited speaker, Prof. Paul Nieuwenhuysen, presented his paper on the image search, image and text combination search. He tried to establish the hypothesis that a combination search increases the precision. Example of the Bwom Kuba mask from Africa was discussed in details. Google Image and TinEye internet search engines can be used to search image with text. Prof. Nieuwenhuysen concluded that Google image has the smart algorithm, cover more data and provides more precise results.

Mr Abhishek P presented the contributed paper on “Classification-based Access Control Methodology in RDF”. Mr J Vivekavardhan’s paper examined the perception of engineering college faculty and students on search engines at Hyderabad, India. Ms Rajarshi Das presented the paper titled “Reading MIND: Analyzing sentiments in texts with software toolkit”.

8.12 Semantic Web and Multimedia Content (Session 3D), 15 December 2016



The session was chaired by Prof. Tengu Mohd T Sembok. The first invited speaker, Dr Ricardo da Silva Torres, presented the paper on “Managing Large Multimedia Data Repositories: An E-Science Perspective”. Dr Torres showed video of the project undertaken by Microsoft-FAPESP (Virtual Institute) and explained the E-phenology project which deals with image processing. The second invited speaker, Dr John Akeroyd, presented the paper on “Semantic enhancement: Improving discovery and discoverability in bibliographic and cultural worlds”. Dr Akeroyd discussed application of semantic layer over database for discovery of bibliographic records as well as unstructured data. He elaborated on crowd-sourced vocabulary, Machine learning indexing, controlled vocabulary tools, and some European projects.

Mr Madhu Nadig presented the contributed paper on “Empirical analysis of Indian political ecosystem as an application of generic textual analysis”. He gave live demo of the data collected during the period august 2016 to October 2016.

8.13 Open Archives Initiatives and Post Metadata Harvesting (Session 4A), 15 December 2016





The session was chaired by Dr Gayas Makhdumi and co-chaired by Ms Neeti Saxena. The discussions during the session revolved around world of open access issues, challenges, and its standards. The invited speaker, Mr Erik-Jan Van Kleef, demonstrated 1Science libraries to benefit from open access.

Dr Surinder Kumar presented the contributed paper titled “Metafast: Web based meta data builder for large scale repositories “. Ms Purbhi Dey Kanungo presented her paper on interoperability standards in digital libraries with special reference to open archives initiatives and post metadata harvesting. Ms Vrushali Dandawate presented a paper titled “Use of Open Access by Engineering Faculty: A Case study of Aissms College of Engineering, Pune”.

8.14 Open Innovation and New Communication Model (Session 4B), 15 December 2016





The session was chaired by Dr Kala Dutta and co-chaired by Dr Shiva Chidambaram. The invited speaker, Dr Klaus Tochtermann, presented the paper “Digitization of Science and its Impact on Libraries”. He discussed about the European open science cloud (EOSC) for collective information centres. Dr Bablu Sutradar presented the paper about the metadata and various kind of metadata harvesting. Large scale metadata harvesting have been applied in National Digital Library project for the Indian repositories. Mr Zahid Wani’s contributed paper focused on Altmetric approach to assess the research productivity by presenting the case study of University of Jammu and University of Kashmir on Research Gate.

8.15 DL Multi-linguality and Interoperability Issues (Session 4C), 15 December 2016



The session was chaired by Dr Shantanu Ganguly and co-chaired by Dr Sanjeev Kumar. The invited speaker, Dr Tengu M T Sembok discussed big data, artificial intelligence, robotics, visualization, search query formulation in web IR system. Dr Sembok emphasized on semantic web and need to be promote better search system. Prof. Akira Maeda spoke about the relationship between the digital humanities and digital libraries across language and record linkage.

Ms Monika Singh presented the contributed paper on social networking use by the students and the research scholars of Institute of Technology, Delhi (IIT) and Delhi Technological University, Delhi. According to her findings, LinkedIn and Academia are the most common social tool for academic purposes.

8.16 Social Media and Ubiquitous Computing (Session 4D), 15 December 2016



Dr Alejandro Bia chaired the session and Dr Lata Suresh co-chaired the session. Dr Adam Koszary presented the paper on strategy for the development of library collection and user development. He explained Bodleian Libraries four social media channels (Facebook, Instagram, Instant Messaging, and Twitter). Ms Meeta W Sengupta discussed educational professional policies and social networking tools which are useful for day to day life. She explained about business case of social media impact and branding.

Mr Sarwesh Pareek presented the contributed paper on effectiveness of social media tools in information sharing and collaborative learning using a case study of B V B Vidyashram, Jaipur.

8.17 Digital Rights Management and Research Integrity (Session 5A), 16 December 2016



The Chair of the session, Dr P K Bhattacharya, emphasized on the importance of Digital Rights Management and research integrity in present digital era. The session was co-chaired by Dr S S Dhaka. Dr Michael Seadle, the invited speaker of the session, focused on 3 key aspects of research integrity: plagiarism, data falsification and image manipulation. Dr Seadle spoke about a survey on the attitude of people towards plagiarism. Dr Somen Chakraborty presented his views on emerging Intellectual Property Right Laws in India. He discussed about various Acts like Indian Copyright Act, 1957; Indian Patents Act, 1970; Trademarks Act, 1999; Protection of

Plant Varieties and Farmers Rights Act, 2001; and others. Dr Chakraborty went on to discuss international regulatory mechanisms and Indian litigation. Dr Tariq Ashraf spoke about measuring the research impact, citation analysis, and concerns related with citation count, impact factor and H-Index.

8.18 E-Learning Platform and Open Educational Resources (Session 5B), 16 December 2016



The session was chaired by Prof. Gobinda Chowdhury and co-chaired by Dr Moorttimatee Samantaray. The invited speaker, Dr Shahid Rasool spoke on online education initiatives done by CEMCA. He discussed knowledge per capita, massive open online courses, global learning community, etc. According to Dr Rasool's study, education through video is more popular than the documented papers as per the viewers' list for Google vs. You Tube.

Mr Vijendra Kumar spoke on online courses on digital libraries like EPG Patshala, Swayam MOOC Potal and E Archarya. Ms Vanita Khanchandani presented the paper on Massive Online Open Courses (MOOCs) highlighted that MOOCs does not required no pre- requisite qualification, available 24X7, no graphical boundaries, reduce financial burden. Ms Alka Rai presented her paper on e-learning and the government initiatives under 12th year Plan. Ms Pramita talked on use of e-resources by N-List in the college libraries under West Bengal State University.

8.19 Enterprise Architecture 2.0 (Session 5C), 16 December 2016



The session was chaired by Prof. C S Arora and co-chaired by Dr R N Malviya. The invited speaker, Prof. Alejandro Bia presented the results of the TRACE project from the point of the view of the DHW Research Group at the Miguel Hernandez University. The project has served to integrate and evolve several tools created to make working with XML, TEI, and TMX faster and easier.

Ms Kavita Chadha presented the contributed paper about libraries on fingertips by using smart phones for dissemination of the library services at IIM Lucknow-Noida. According to her findings, the students are keen to use library Apps. This demonstrates the need for libraries to adopt this technology. Ms Prida Ariani, through her study, presented encouraging young voters about the elections using social media In Jakarta, Indonesia. Based on analysis of students' opinion in the University of Delhi, Mr Saleeq Ahmad Dar emphasized that leading libraries should adopt mobile strategies for the delivery of content and services.

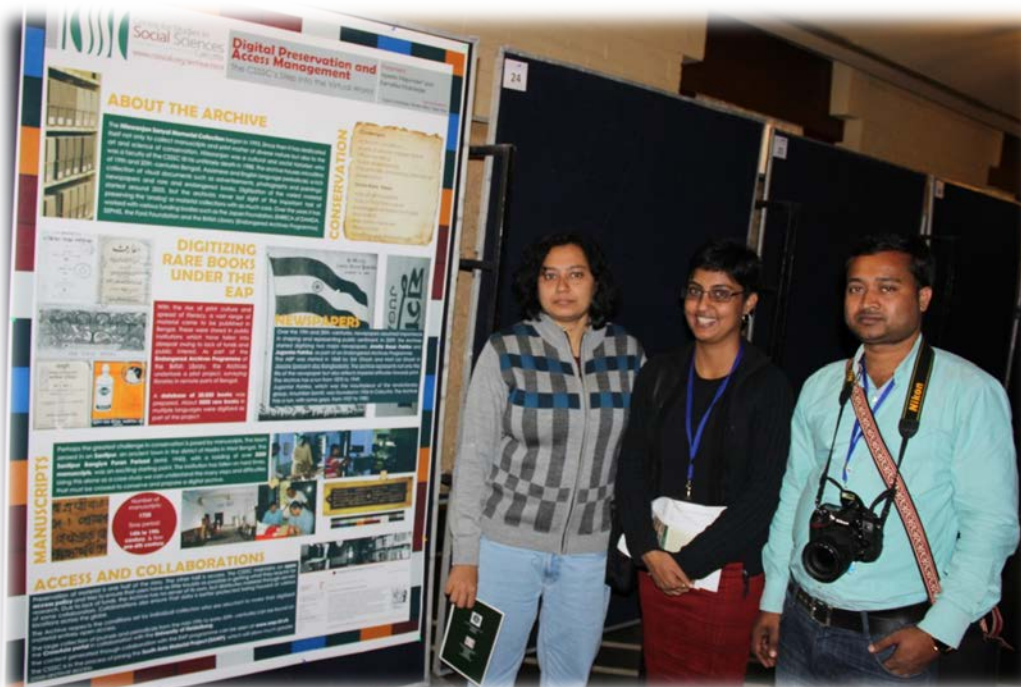
8.20 Integration of Data Warehousing & Mining (Session 5D), 16 December 2016



The session was chaired by Dr M Madhusudhan and co-chaired by Dr S Venkadesan. Dr Anna Janikova's presentation focused on data mining for library management and user service. She discussed about users behavior in browsing the OPAC during all the week days from midnight to 11 pm in the night in graphical mode as a case study of the library of Silesian University in OPava, Czech Republic.

Mr Chirag presented the contributed paper on graphic visualization of scientometric data. He explained the use of Google Scholar and Microsoft Academic Science in extracting scientometric data. He also discussed about the Citation Analysis and H-index. He threw light on technologies like Data Driven Documents(D3), Python, HTML, and CSS for visualisation.

Poster Presentations





The poster presentations were held on 14 and 15 December 2016. The entries for the poster presentations were reviewed by members of the National and International Programme Committee and 42 presentations were finally short-listed. A Poster Award Committee was constituted to confer three best poster awards. The details of short-listed posters presented are attached as Appendix 'I'.

9 Thematic Workshops

9.1 Day 1 Workshop on Innovation and Knowledge Management (December 14, 2016)

Lead Speaker



Dr Gautam Shroff (Vice President and Chief Scientist, TCS Innovation Labs) in his address “Innovation Management: Balancing Creativity with Discipline” stressed on striking the right balance between creativity and discipline. In his view, creativity was imperative for innovation on a large scale and; discipline was a necessary complement to monitor innovation and its commercial viability. He made a pertinent observation that –“Deployment is the hallmark of innovation”. Innovation was a continuous process and hand maiden of invention. Potential innovations can be judged from the perspective of market and its impact whether it was disruptive or not.



Shri Mandar Bhagwat (Co-founder, Director and CTO, SpadeWorx Software Services) presentation, “Knowledge Management for Generation Y and Z” reflected on user centered software Engineering. He spoke on profile and preferences of users on the internet. Today’s digitally native generation creates and consumes rich media (videos, photos, and selfies) effectively than traditional text documents. Some of the points highlighted were:

- Digital tools combined with a clear business strategy and communication methods could trigger a new wave of knowledge generation and sharing;
- Conversational user interface powered by natural language processing is expected to overtake the graphical user interface as the primary means for user interaction.

Technical Session I (Day 1)



Prof Kavi Mahesh’s (Dean of Research, Director, KAnOE) lecture, “Ontology based knowledge management” was insightful. He referred to many definitions of ontology. One that captured its essence was “definitive and exhaustive classification of objects and their relationship in all sphere of being”. In his view knowledge management (KM) could be understood by looking into: (a) purpose of KM; (b) key function of KM; (c) key role of knowledge organization (KO) in KM; (d) Ontology—based KO for KM; (e) enhancing ontology for KM and ; (f) future of KM. He stressed that a good KO was essential for KM as it improved search, made browsing easier, promoted solid networking and makes social knowledge management effective.



Dr Ganesh Natarajan (Executive Chairman and Founder of 5F World) gave his keynote address on the topic “Knowledge Management in an era of Digital Transformation”. Dr Natarajan, while emphasizing that knowledge management was a continuous journey, said, “Simplifying the user experience is the key. Knowledge management can be successful only if one first creates the ‘culture’ or aspiration, develops the process, and then provides technology and leadership.”



Shri Mohit Taneja (Senior Director, Innovation Strategy, Fresenius Kabi Oncology Ltd) in his talk “Strategy in the Innovation Economy” highlighted the role of knowledge based companies in the global economy. Alphabet, which owns Google, has half the revenue of General Motors, but was valued 11 times more. In India, TCS has market cap 30% higher than that of Reliance Industries while having fixed assets which were 5% of Reliance industries. He highlighted some key features of knowledge based economy which included (a) what really matters was how best you can convert your resources into value; (b) Research involved investing money and creating knowledge while innovation is investing knowledge to create money (value) and; (c) decentralization of idea generation.

Technical Session II Theme Business Success through Knowledge Augmentation (Day 1)



Ms Tania Chatterjee, (Vice President, Learning and Development, Royal Bank of Scotland, India) gave theme address, “The MAKE or Break – What makes your Business, Business Worthy”. In her address she highlighted the growing gap between India’s higher GDP growth vis-à-vis global growth over the last decade. At a micro level, she drew attention between a successful and an unsuccessful company. Successful companies were distinct and drive on a shared direction, marked by transparency and account ability, with a strong customer focus, innovation thrust and people centered development. In contrast, unsuccessful firm was marked by increasing operating costs, lower efficiency, loss of collective organization and intelligence and carried a higher financial risk and regulatory risk.



Shri Anirban Chatterjee (Senior Manager, EY Knowledge, Ernst and Young) spoke on “Knowledge management for innovation”. In his address he highlighted the use of small samples to assess and learn more about a population as a whole. The other issue he referred to was evolution of knowledge management. In early phase emphasis was on capturing knowledge and writing it down for the benefits of others. In the latter phase of knowledge management the emphasis was on knowhow, insights and experience. This required connecting people. In his opinion innovation was a social phenomenon that required diversity of thought /perspective .Technology does not manage knowledge but facilitates interaction.



Mr Athar Ali (Manager, Learning and Development, KPMG) in his speech –“Collaborative Knowledge sharing and Crowdsourcing” emphasised the importance of Surveys. Then he talked about the timeline of crowdsourcing wherein he cited various examples such as that of Kodak where they had introduced a ‘Go for Gold’ programme, Toyota, Bollywood so on and so forth; and also discussed about their limitations. Besides, he talked about the experiences of some of the major Consulting firms and their learning curves.

9.2 Day 2: Workshop on Big Data & Analytics (December 15, 2016)

Day 2: Keynote address



Shri Rajesh Shewani (Head, Technology & Solution Architecture, Teradata, India) delivered the key note address “Big data – creating a culture of actionable insight”. He drew the attention to the rise of knowledge based companies as the top global enterprises in terms of market capitalization with the exit of traditional resource intensive companies from the global corporate landscape. Knowledge based companies like Apple, Microsoft, etc are data driven on real time basis. Companies which are leveraging data/knowledge are now increasingly dominating global retail space with their asset less and zero inventory model of operation driving down the costs and benefiting consumers worldwide. In transportation sector, digitalization has scaled new heights. The high speed rail (HSR) system in Spain runs on a system based on digitalization which has resulted in 99.9% on time performance, which has led to passengers switching over from air to HSR mode of transportation.



Mr Raghav Aggarwal (Co-Founder, The Fluid AI) gave an insightful presentation on “Making Data interactive via Artificial Intelligence”. He highlighted that machines can see people like humans do and this creates a new paradigm as to what’s possible. Mr Aggarwal gave an excellent interactive demo wherein he presented an interactive kind of technology that put him in the screen. Computer vision recognizes and asks him about his language preferences. He chose giving feedback as a way to explain to the audience as to how this demo works. In practical life, giving feedbacks is boring and instead he explained if we compared this to flinging things; it would make the whole interface so much interactive and deeper. In real time, the system realizes his hand gestures and is happening instantaneously. He took the example of a bank. Put him in the center of the room and interpreting his actions- important role in decision making. Fluid AI tried to link merchant transactions. It was the kind of data that the banks were throwing at them. He further stressed on the fact that the raw material to AI is both structured as well as unstructured data and is practically everything out there. When AI starts to understand this, then you’ll start to see the natural world come along with the digital world.

Technical session I on Big Data & Analytics (Day 2)



Dr G Ganesh Das (Tata Power, Delhi Distribution Limited) made a presentation, “Digital and Business Intelligence at Utilities”. He provided a broad overview of Tata Power distribution network in Delhi and how TataPower is using big data to address a host of issues on a real time basis. The need for big data solution was felt on account of: (a) Ever increasing data for real time reporting/analysis; (b) For better analysis of pattern of electricity consumption; (c) Prediction

The Tata power has used digitalization for smart meter reading, smart revenue recovery, safety audit, online new connections, proactive SMS alert, quick connect mobile app, paper less procurement process etc.



Shri Subrata Das (Industry Director, Public Services, SAP India Pvt. Ltd.) gave a presentation “Big Data Interventions in Industries- From Ideas to Performance”. In his address he highlighted emergence of new business models shaping competitive advantage based on leveraging big data. Data driven business enterprises enjoy host of advantages over the conventional brick and mortar firms in terms of real time decision making, understanding consumer behavior, responsive business network and intelligent asset. Besides, knowledge and technology is allowing firms to explore new business streams.

Technical Session II on Big Data Biotechnology & Bioinformatics Challenges and Opportunities for India (Day2)



Dr T Madhan Mohan (Adviser, Government of India, Department of Biotechnology) delivered the keynote address “Role of Big Data in Current Bioinformatics Research”. He said that the advent of high technology for nucleic acids, proteins and metabolite profiling has revolutionized research in life science. Unprecedented scale of data being generated in genome science required large computer power to store and analyze such data. This can be gauged from the fact that: (a) more than 2000 sequencing instruments exist in the world and; (b) more than 15 peta bytes X years of genetic data exists. This required knowledge based bioinformatics tools for extracting knowledge from the huge amount of data being generated. This needed a three stage process involving data acquisition, data analysis (new technologies like map reduce, hive and impala) and data management (technologies like hadoop).



Prof Dhruba K Bhattacharyya (University of Tezpur) made a comprehensive presentation, “Big data analytics in Bioinformatics; A Machine Learning Perspective”. He elaborated on characteristics of big data, with reference to bioinformatics. The other dimensions pertaining to big data he referred to were exponential growth in bioinformatics data, problems, data mining, data handling, big data architecture for bioinformatics, network module extraction etc. He mentioned three defining characteristics of big data- volume, velocity and variety.

Panel discussion (Day 2)

Dr T Madhan Mohan (Adviser, Department of Biotechnology, Government of India) chaired the session. He started by emphasizing on the role of Big Data in current biotechnology research. The session had four speakers namely: Dr Dinesh Gupta (ICGEB, New Delhi), Dr A. K. Mishra (IARI, New Delhi) and Dr D. Sundar (IIT Delhi).



Dr Dinesh Gupta (Group Leader, International Centre for Genetic Engineering and Biotechnology, New Delhi) gave a talk on “Big Data analysis in Biotechnology: applications of machine learning and challenges towards clinical applications”. He started out by saying that ICGEB works in the field of genetic engineering that encompasses development of translational bioinformatics tools, tools based on AI, computer-aided drug designing, systems biology for translational bioinformatics, prediction of Post Translational Modifications (PTMs) in

Plasmodium falciparum etc. Genome wide-screening in P. falciparum performed by ICGEB, has been the first-ever report on a parasite. Dr Gupta reviewed the applications of machine learning for analysis of high throughput data, especially related to oncology wherein most of the studies have been carried out on predictive models for cancer. 62 genes have been found so far that can be used as potential biomarkers and should be taken up for further validation. He concluded that the machine learning algorithms are potentially quite useful in the analysis of clinical Big Data.



Dr A K Mishra (Senior Scientist, Agriculture Knowledge Management Unit, ICAR) during the course of panel discussion made an illuminating presentation, “Big data and cloud computing in Agri-bioinformatics”. He mentioned that the world was undergoing a data explosion of unprecedented dimension. Every day, 2.5 billion bytes of data was being created. The characteristics of big data were volume –huge amount compared with traditional data source, variety- data being generated from different sources both by machines and people, velocity – data is being generated extremely fast and veracity – data is being sourced from a variety of sources, which needed to undergo veracity /quality test. In his view big data needed to be leveraged to solve some of the complex issues in bioinformatics. He mentioned seven key steps were required to husband and harvest data. These were governance, management, architecture, usage, quality, security and privacy. The next big thing in big data analysis is cloud computing given its huge advantage in application sharing, data storage and analysis.



Dr D. Sundar (DuPont Young Professor, Associate Professor, Department of Biochemical Engineering and Biotechnology, Indian Institute of Technology (IIT), Delhi) gave his presentation on the topic “Novel tools and big data bioinformatics enabling precision genome engineering”. In his talk Dr Sundar discussed about the potential of zinc finger protein-mediated genome targeting for “directed mutagenesis” and targeted “gene editing” of the plant and

mammalian genomes. He also dealt with the different models and approaches for computational design of functionally self-contained zinc finger proteins for targeted genome engineering being developed by his group at IIT Delhi.

9.3 Day 3: Workshop on Social Media & Analytics (December 16, 2016)

Dr. Shantanu Ganguly, Fellow, Knowledge Management Division at TERI, moderated the session and discussed the recent trends in the Social Media Platforms with special reference to Intra-organisational group meetings, among other things, adding that Analytical tools were coming into force to measure the vast amounts of data being generated today.



Mr Sameep Mehta (STSM and Manager, Knowledge Engineering and Encrypted Analytics, IBM Research) presented his views on the topic “Practice of Social Media Analytics”. He presented an overview of some of the common tasks in analyzing text messages in social media and reviewed the state of the art as well as present new ideas on handling common research problems from social media, summarization, location interference and fusing external data with social data.

Day 3 Technical session 1



Ms Meeta Sengupta (Social Media Evangelist and Independent Consultant) made an interesting presentation, “Impact and Influence in Social Media”. She drew contrast between traditional media and the social media. Social media was increasingly being used as a marketing tool, to promote branding, and outreach and enhance product visibility and impact.



Mr Danish Contractor (Research Scientist, IBM Research India) made a presentation, “Analytics for Learning Content Management”. He highlighted how digitized resources could be used precisely and efficiently for content search and retrieval in learning.



Shri Vivek Singh (Solution Architect, Pre-Sales, Teradata India) made a presentation, “Social Networks Uncovered”. His focus was on graph analysis, creating social network from text structure, chapter size graph building etc. In a nutshell he emphasized the following:

- Importance of building social network
- Using graph analysis to build social network
- How to build a network using text data
- How to build a network using call data record (CDRD)

Day 3: Technical session 2



This session was chaired by Shri N Madhavan (Senior Editor and Technology Columnist) who made presentation, “Rumours, Lies and Virality” where he quoted an apt observation.

“..... in an ever connected world where speed often takes precedence over truth, an observation by a private citizen can quickly become a talking point, even as it is being proved false, New York Times, November 26, 2016. It is estimated that there will be around 2.67 billion social media users around the globe in 2018, up from 1.91 billion in 2014



Mr. Sheshadri Chatterjee (Asia Pacific Business Programme Manager, Microsoft Corporation) gave an interesting talk on the topic “How to develop a successful CRM strategy and its implementation and utilization in an organization?”



Shri Prateek Shah (Digital Marketing Trainer & Founder, Digital Defynd) made a presentation “Digital Marketing Trends to look forward to in 2017”. The key points of his exposition were:

- Content is not the king, distribution is the king;
- Stop selling stories, start selling headlines;

- Stop focusing on buzz, start concentrating on conversation;
- People watch more than they read these days. Communicate visually;
- Don't ignore the new trends:
- Don't try to ride on ever new trend
- Short term is the new long term, instant is the new short term.



Mr Vinkal Chaddha (Associate Director, KPMG Global Services) gave his talk on the topic “Social Media Analytics and KPMG’s Knowledge Management Policies”. He elaborated on why KM at KPMG matters so much in professional services and the KPMG experience, and presented what are included in social media tools; what is unique about them and how KPMG uses the social media. He highlighted how Social Media is used for driving towards stronger collaboration, sharing and relationship building.

10 Special Events

13 Special Events were held from 13-16 December 2016 focusing on contemporary topics. Appendix `D` provides the detailed agenda of the Special Events.

10.1 Special Event on National Digital Library of India (SE 1), 13 December 2016



Event Partner: Indian Institute of Technology Kharagpur, India

Overview:

Dr Partha Pratim Das, Joint Principal Investigator, National Digital Library (NDL) Project, Indian Institute of Technology (IIT) Kharagpur, India

Address:

Dr Al-Amin Yusuph, Advisor for Communication and Information, UNESCO New Delhi Cluster Office for Bangladesh, Bhutan, India, Maldives, Nepal and Sri Lanka

Panel Discussion:

Chair:

Dr Jagdish Arora, Director, Information and Library Network (INFLIBNET) Centre, India

Co-Chair:

Mr Nanda Gopal Chattopadhyay, CTO - NDL Project, IIT Kharagpur, India

Panelists:

Dr John Akeroyd, Senior Consultant, CIBER Research, Honorary Research Fellow, UK

Dr Maria Gaede, Lecturer, Berlin School of Library and Information Science, Humboldt-Universitat zu Berlin

Dr Kristian Jensen, Head of Collections & Curation, British Library, UK

Dr Uma Kanjilal, Professor, Library and Information Science, IGNOU, New Delhi, India

Dr Ramesh Gaur, University Librarian, Jawaharlal Nehru University, India

Dr Partha Pratim Das, Joint Principal Investigator, NDL Project, IIT Kharagpur, India

This session commenced with the overview of National Digital Library Portal by Dr Partha Pratim Das. Dr Das presented about the vision of NDL India. He discussed the different aspects of the project and illustrated the basic core functionality and features of NDL in terms of *browse* and *search*.

Dr Al-Amin Yusuph, in his address, appreciated the NDL portal and stated that NDL is very close to UNESCO mandate due to its objective to enhance collaboration in the work of advancing the mutual knowledge and understanding of people of India and world and to maintain increase and diffuse knowledge. He also highlighted about the significant of digital libraries in context of Sustainable Development Goals in quality education. Dr Yusuph also highlighted about Agenda 2030 to meet the SDG target for everyone especially the poor ones. . Dr Yusuph concluded his address by wishing for a sustainable future of NDL.

The Panel Discussion was chaired by Dr Jagdish Arora, and focused on the topic “Learner centric digital library for the next generation knowledge society”.

Dr Kristian Jensen spoke about handling heterogeneous object and interoperability issues in digital libraries. He talked about British Library and its digital publications. Dr Jensen also highlighted the importance of metadata and its standards

Dr Ramesh Gaur congratulated IIT Kharagpur for the tremendous visibility of NDL. Dr Gaur talked about the importance of metadata harvesting in digital library.

Dr Maria Gaede discussed about assessment and performance issues in digital libraries. She stated that the system should be defined beforehand on the learning outcome from digital libraries. Further, Dr Gaede highlighted the importance of digital library in learning cultural heritage and meeting research requirement. She also mentioned that digital libraries provide high quality metadata.

Dr Partha Pratim Das elaborated about taxonomy wherein users applied public tags and captured the term which they are searching. Dr Das discussed taxonomy and crowd sourcing of metadata and how metadata is being created.

Dr Uma Kanjilal spoke about the information seeking behavior and category of users and usability of service for the purpose it has been designed.

Dr John Akeroyd elaborated about the CIBER Research activities that are keeping track of records of library and information services by using different tools such as web analytics, transaction logs, Google engagement, publisher systems etc. He also talked about various discovery tools and said the e-commerce engines are highly professional in using the user data. In his concluding remarks Dr Akeroyd recommended the following for user friendly digital libraries:

- Improved search and search algorithm
- System which can use search history
- Accessibility and integration in different platform
- Data analytics
- Geographic code for digital libraries e-learning platform.

The session ended up with concluding remarks by the Co-Chair. At the end of the session two opinion poll questions were asked.

Opinion Poll V: What is the key impediment for large scale use of existing digital contents?

The options were:

- A. Users unable to locate appropriate digital content quickly
- B. Limited availability of free of cost digital contents
- C. Internet access/bandwidth limitation

The voting pattern of participants (including the online viewers) revealed that maximum voters (52%) chose option A -Users unable to locate appropriate digital content quickly” as the key impediment, followed by the option C (28%), and Option B(20%). (Figure 8).

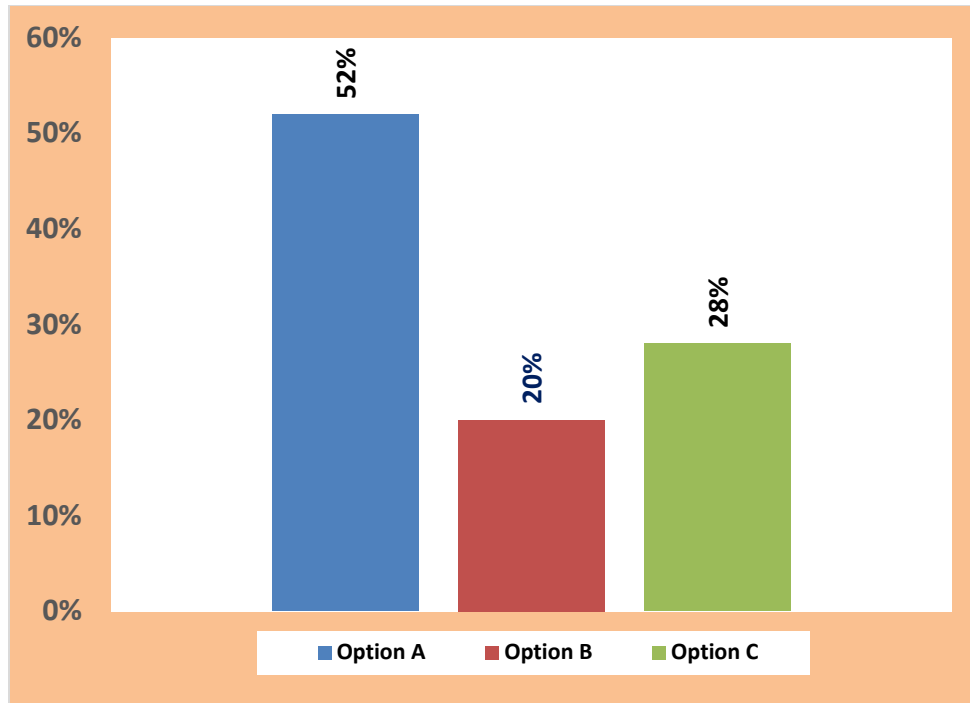


Figure 8. Opinion Poll V

Opinion Poll VI: *What can be most judicious approach for creation of metadata in large-scale?*

The options were:

- A. Application of machine learning techniques
- B. Crowd sourcing
- C. Controlled sourcing from established institution

Option A received 41.8% votes, followed by Option B and Option C. Application of machine learning techniques is the most favoured option by majority of respondents (Figure 9).

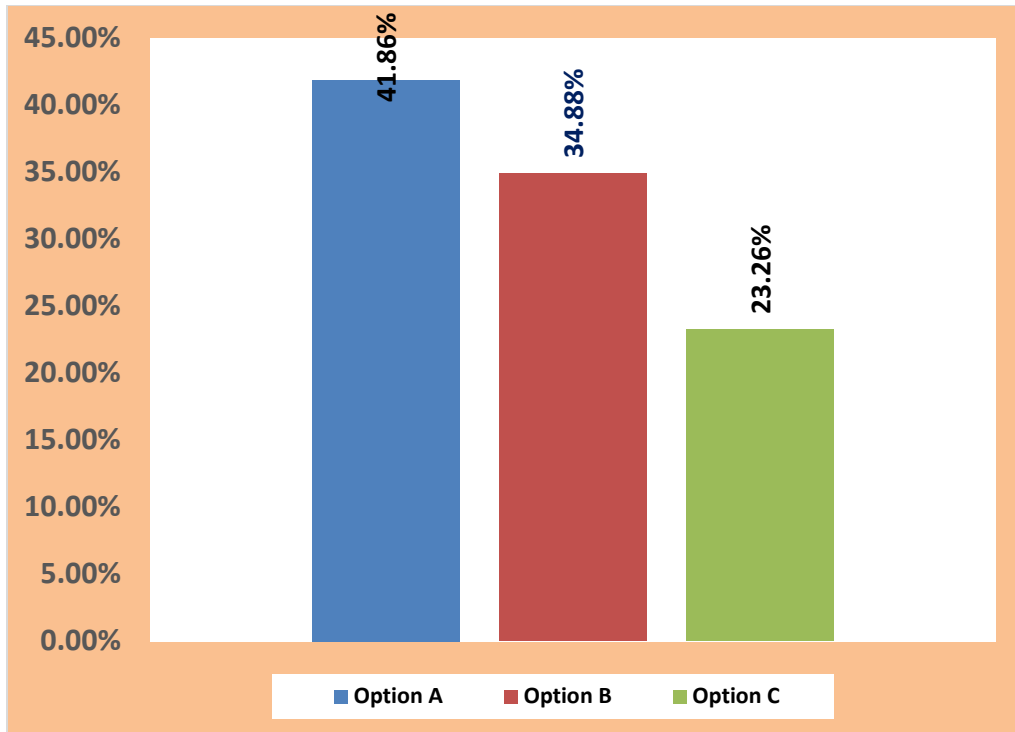
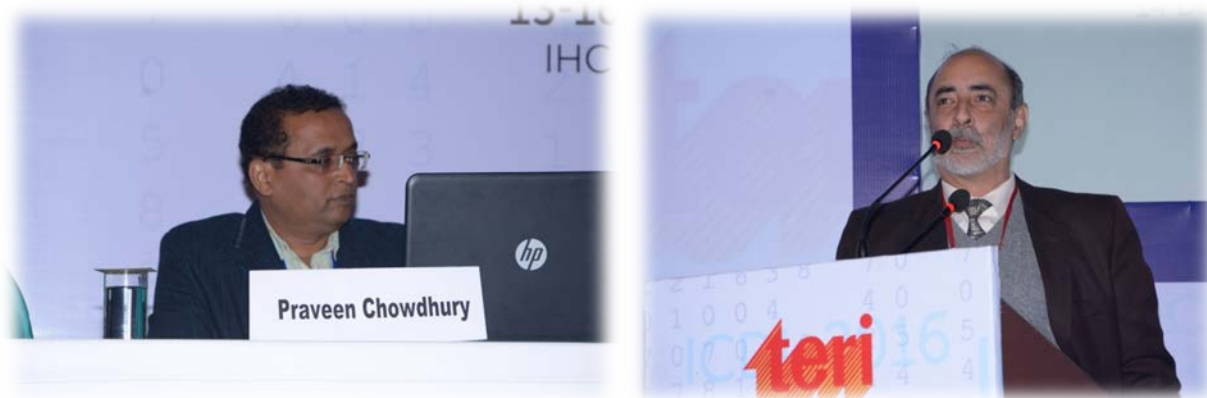


Figure9. Opinion Poll VI

10.2 Content, Context and Technology: Monetizing your Content through New Means (SE 2A), 14 December 2016





Event Partner: American Chemical Society (ACS), USA

Chair:

Mr N K Mehra, President, Federation of Indian Publishers, India

Co-Chair:

Dr Praveen K Chowdhury, Assistant General Manager-Documentation, DLF, India

Lead Speaker:

Mr Brandon Nordin, Senior Vice President, Sales, Marketing & Digital Strategy, ACS Publications, USA

Panelists:

Mr Kailash Balani, Managing Director, Aditya Books Pvt. Ltd and , Balani Infotech, India

Prof. Dhruv Nath, Professor, Information Management & Chairperson, Entrepreneurship and Incubation Center, Management Development Institute, Gurgaon, India

Ms Garima Babbar, Head, Strategic Alliance-South Asia, Adobe India

Dr Susmita Chakraborty, Associate Professor, Department of Library & Information Science, Calcutta University, India

The session was chaired by Mr N K Mehra who emphasised on content monetization and their market in the current environment. He stressed on need to find new ways to learn and market content and technology can play an important part in this such as cloud technology.

Mr Brandon Nordin's presentation focused on monetizing library content. He stated that monetisation and digitisation go hand in hand and explained about the various factors to be considered before the material is digitized such as limit of users and targeted audience, capacity support, and market feedback. The Return on Investment (ROI), distribution of digital content, contracts and commercial concern should also be considered while designing the business model.

Mr Kailash Balani discussed about the challenge for publishers in the future. Mr Balani spoke about the free material available over the web. However, authenticity of the information is

critical. He stated that free content available with publishers is more valuable than the data available over various social media sites. Pay-per-click may be the option to be explored for authentic information from the publishers.

Prof. Dhruv Nath discussed about the investment viewpoint and requirement of funds. According to him, monetizing the digital content requires finding enough customers to pay for use, cost of building a process of content to transform for generating revenue, and identification of the entry barriers like internet and mobiles.

Ms Garima Babbar elaborated about digital experience of online marketing, how to monetizing digitized content and the best possible ways to use such technology in real practices. She highlighted the significance of the right use of technology as the users want only customized and relevant materials. Ms Babbar emphasized the need to be capable enough and develop our skills as technology is constantly changing.

Dr Susmita Chakraborty spoke about the content that needs to be digitized to provide value, quality and support for the academic community.

The session ended with the closing remarks by Chair and Co-Chair.

10.3 Massive Open Online Courses (SE 2B), 14 December 2016



Event partner: Power Creator, China

Chair:

Prof. Dinesh K Gupta, Professor of Library and Information Science and Director (Research), Vardhman Mahaveer Open University, Kota, India

Co-Chair:

Dr Dilara Begum, Associate Professor & Chairperson, Department of Information Studies & Librarian (Acting), East West University, Bangladesh

Lead Speakers:

Mr Frank Meng, Director, International Department, Power Creator Info & Tech Co. Ltd, China

Dr Uma Kanjilal, Professor, Department of Library Science, IGNOU, India

Setting the Theme:

Dr Barnali Roy Chowdhury, Assistant Professor, School of Professional Studies Netaji Subhas Open University, India

Panelists:

Dr Andrew Thangaraj, Professor, Electrical Engineering, IIT Madras, India

Dr Anupam Basu, Professor, Department of Computer Science Engineering, IIT Kharagpur, India

Dr Deepak B Pathak, Professor, Department of Computer Science and Engineering, Indian Institute of Technology Bombay, India

Dr K Srinivas, Professor, ICT, National University of Education Training & Public Administration, New Delhi, India

The session was chaired by Prof Dinesh Gupta who gave the opening remarks.

Mr Frank Meng discussed about Massive Open Online Courses (MOOCs) and its special relevance in order to bring education to the vast population in India and China. MOOCs started in China in 2013. According to Mr Meng, the lack of high quality MOOC courses is a bottleneck in the spread of MOOCs. Power Creator is offering the *Lecture Capture* solution in which no extra manpower is needed. Up to two cameras can be placed in the classroom to capture the lecture of the faculty as well as student interaction. The software offers itemwise and lecture wise search facility.

Prof. Uma Kanjilal spoke of SWAYAM which is a Government of India initiative in the field of MOOCs. SWAYAM stands for *Study Web for Young Aspiring Minds*. SWAYAM is scheduled for formal opening in Jan2017. Prof. Kanjilal expressed concern that there is a trend towards monetization in MOOCs. MOOCs are also grappling with a high student dropout rate.

Dr Andrew Thangaraj discussed about of his work with nptel.ac.in (NPTEL). The MOOC in the field of technology was started in March 2014 and has been widely received. In the July semester, 100 courses were running. 50,000 students have appeared for the exams and 40,000 students have passed. Many of the students are faculty in colleges. With a view to improve the completion rate of the course, NPTEL has started opening local chapters in engineering colleges and even offers scholarships for appearing in the end semester MOOC exam.

Prof. Deepak Phatak spoke of the need to blend online learning with face to face courses. He said that MOOCs will be successful only if there is interaction with students. For this there should be mandatory training for teachers. Prof. Phatak started his talk with NPTEL experience and initiative to experiment on MOOCs relevant to India as the NPTEL got a huge success in running online courses.

In his concluding note, Prof Dinesh K Gupta said that there are 6 MOOCs in the field of library and information science in SWAYAM. He thanked the Co-Chair, Prof Dilara Begum of Bangladesh and his panel of speakers for a lively and informative discussion on MOOCs.

The following two Opinion Polls were conducted at the end of the session.

Opinion Poll VII: Though the concept of MOOC is highly popular due to use of best resources, best manpower by renowned institutions, yet the dropout rate amongst the enrolled learner is proportionately high mostly in developing countries as because of:

The options were:

- A. Infrastructure and awareness
- B. Enrollment in more than one course due to availability of courses free of cost
- C. Level of performance of enrolled participants are not at per the global standards

According to respondents, infrastructure and awareness are the major factors leading to high dropout rate in developing countries. Option A received 55.6% of votes (Figure 10). Options B and C received 22.2% votes each.

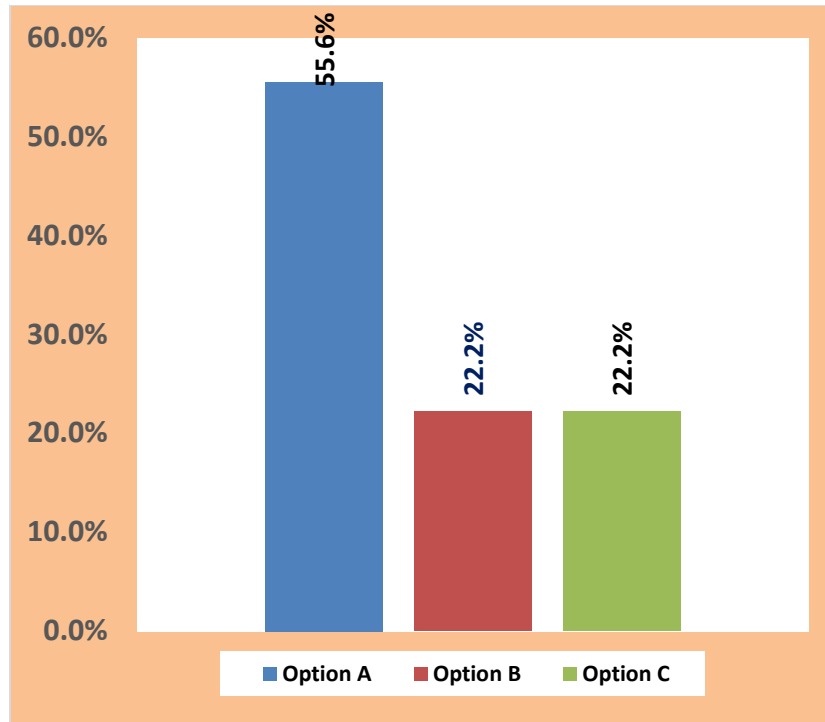


Figure 10. Opinion Poll VII

Opinion Poll VIII: *Improving accessibility of MOOCs in remote areas is important to counter:*

The options were:

- A. Lack of awareness of MOOC
- B. Lack of knowledge about the concerned course
- C. Lack of mandate /rules

The voting pattern of all participants (including the online viewers) revealed that Options A received maximum support from the respondents, followed by Option B and Option C. Lack of awareness of MOOCs is a major issue amongst stakeholders (Figure 11).

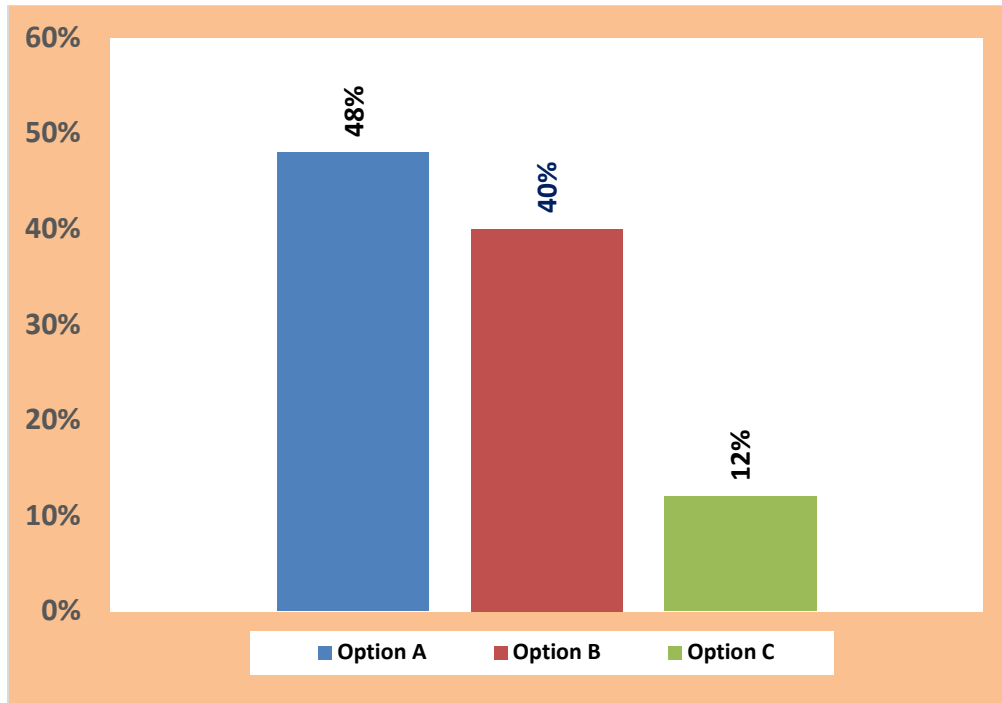


Figure 11. Opinion Poll VIII

10.4 Digitization of Indigenous Knowledge (SE 3A), 14 December 2016



Chair:

Dr Sachchidanand Joshi, Member Secretary, Indira Gandhi National Centre for the Arts, New Delhi, India

Co-Chair:

Dr Pravakar Rath, Professor of Library and Information Science and Dean, School of Economics, Management and Information Science, Mizoram University, Aizawl, India

Panelists:

Dr Hadar Miller, Chief Information Officer, National Library of Israel, Jerusalem, Israel

Dr P R Goswami, Director, Kalanidhi Division, Indira Gandhi National Centre for the Arts, India

Dr Klaus Alexander Pendl, First Counsellor-ICT, Trade and Economic Affairs, Delegation of the European Commission to India

Dr Kristian Jensen, Head, Collections & Curation, British Library, UK

Prof. Jean Marc Comment, Head of the Unit, Swiss Federal Archives AF, Berne, Switzerland

Chairing the session, Dr Sachchidanand Joshi said that digitization of indigenous knowledge is an important topic because a lot about the Indigenous knowledge are not properly documented and digitized. The biggest challenges is to retrieve, restore and preserve and after doing all these it need to be digitized. Technology has moved ahead but digitization of indigenous knowledge is not only about technology but also about thoughts, feelings and emotions.

Dr Hadar Miller explained about collection of indigenous cultural heritage of National Library of Israel (NLI). National Library Law (2007) states that “To collect, preserve, cultivate and endorse the treasure of knowledge heritage and cultural in general”. He also spoke about a recent project that was initiated to digitize all text written in Hebrew letter all over the world. It has 18195 manuscripts and available to general public in NLI.

Dr P R Goswami gave a brief overview about IGNCA and its unique collection. Digital archive project of IGNCA related to audio visual, classical music, interview, etc. He also discussed about the problems faced during the digitization process like wiz creation of metadata, standard of metadata , and IPR.

Dr Klaus Alexander Pendl spoke about the EUROPEANA that helps connect disparate datasets. It is managed by European Foundation and has a collection of 64 million audio-video resources.

Prof. Jean Marc Comment discussed spoke about two projects -- Eugène Cattin photographs archives and Swissair photographs archives. Prof. Comment noted that it is better for a project to do a “controlled” crowdsourcing and the empowerment of the people involved in the crowdsourcing.

The session ended with the concluding remarks from the session Chair and Co-Chair.

10.5 Innovation in Digital Publishing (SE 3B), 14 December 2016



Event partner: Begell House

Chair:

Mr Prasanto K Roy, VP & Head, NASSCOM Internet, Mobile & E-com. Council, India

Co-Chair:

Dr Sudhir K Arora, Consultant, Campus of Open Learning, University of Delhi, India

Lead Speaker:

Ms Anastasia Matskovich, Director, Begell House, Inc., USA

Panelists:

Dr Ricardo Da Silva Torres, Associate Professor, Institute of Computing, University of Campinas (UNICAMP), Brazil

Ms Mrinalini Sardar, User Experience Designer, Adobe India

Mr Javed Ali, Adobe India

The session was chaired by Mr Prasanto K Roy. Mr Roy stated that India has got over 1 billion mobile subscribers out of which 350 million internet users on mobile base only. In this context he explained how digital publishing through mobileApp can rule the market. Mr Roy further said that library is the center for e-learning and librarians need to spread information among the ultimate user. Virtual reality is the new paradigm for e-publishing which includes multimedia effects in it.

Dr Sudhir K Arora highlighted the facts that the digital publishing plays a key role in providing digital contents to the user anywhere round the clock. Development of Apps are also essential to promote digital publishing.

Ms Anastasia Matskovich demonstrated about Begell House digital library products such as e-journal, e-book, references, and proceedings and search engine features. She presented top technology trends in digital world as publishers are changing from print to web.

Dr Ricardo Da Silva Torres mentioned about the digital publishing challenges and opportunity for handling multimedia data. Dr Torres stressed on the fact that skills of human combined with technology can be used to produce active and dynamic system to provide knowledge to user and empower them in their daily activities.

Ms Mrinalini Sardar focused on evolving content in the digital media and the way content is changing in publishing. She observed that micro content is the future of the publishing industry.

Mr Javed Ali shared his ideas about bringing together print and digital media through PDF format. He explained in a very interactive way asking people about their preferences between digital versus print media.

The following two Opinion Polls were conducted at the end of the session.

Opinion Poll IX: For a scalable Digital Publishing platform, which of the following is the most suitable as Content Management System?

The options were:

- A. Open Source CMS Platform – Drupal
- B. Custom CMS platform from software publishers
- C. Ground-up developed own CMS Platform, catering to publisher's specific needs

Option A received the maximum votes by the participants, followed by Option C and Option B. According to the Opinion Poll, Open Source CMS Platform, Drupal, is the most suitable as Content Management System (Figure 12)

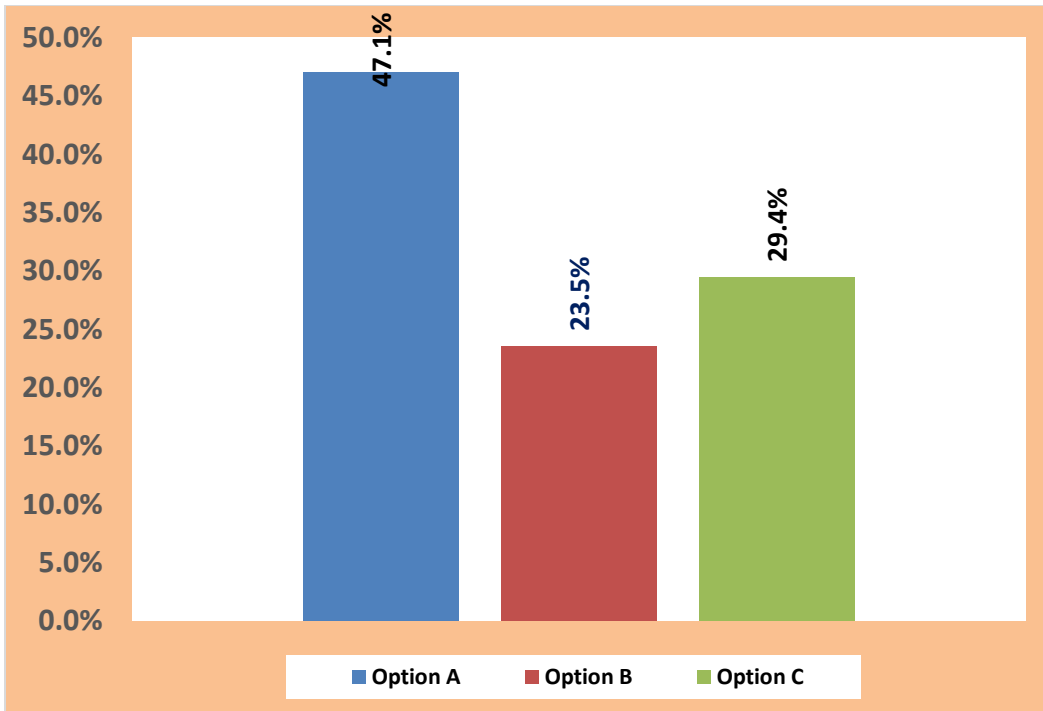


Figure 12. Opinion Poll IX

Opinion Poll X: Given the multiplicity of Content Consumption platforms, which of the following would be your preference:

The options were:

- A. A responsive design, wherein the design adapts to the screen, with a common CMS feed
- B. A separate web design and a separate mobile design, with a separate app
- C. A responsive design with a separate app

According to the opinion of the participants, a responsive design with a separate app is the most favoured option, with Option C receiving 42.9% votes. Option A, i.e. a responsive design, wherein the design adapts to the screen, with a common CMS feed, came a close second position in terms of votes (Figure 13).

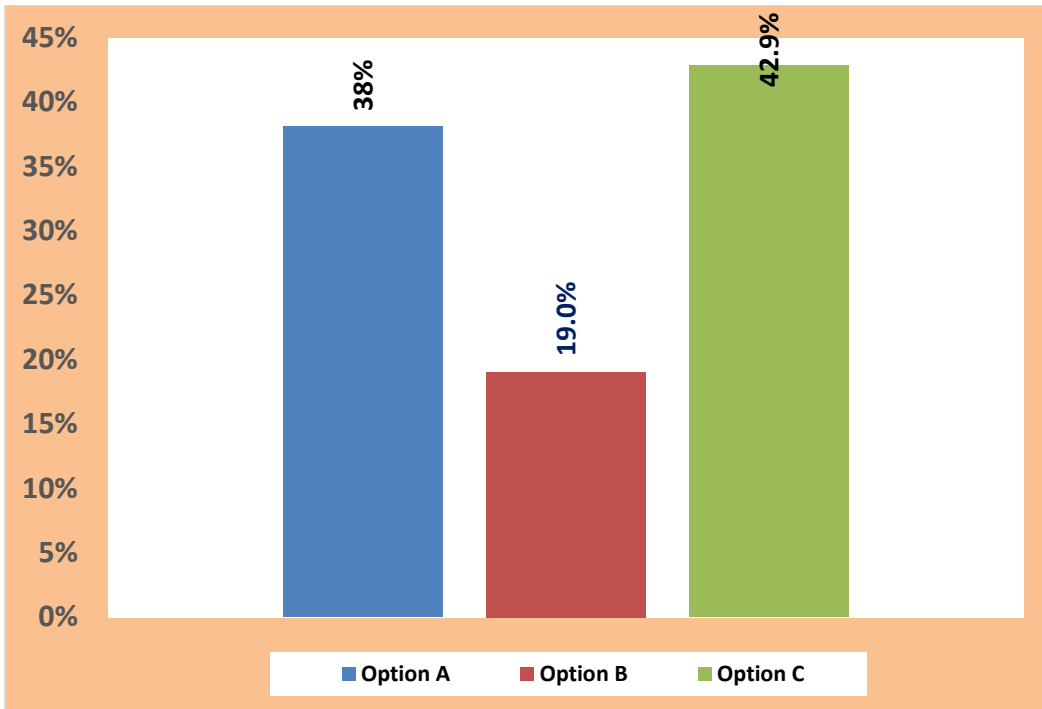


Figure 13. Opinion Poll X

10.6 Universal Access and Sharing of Research Publications and Data: A Strategy Towards Open Knowledge (SE 4A), 15 December 2016





Chair:

Dr Klaus Tochtermann, Director of the ZBW-Leibniz Information Centre for Economics and Professor for Media Informatics at Kiel University, Germany

Co-Chair:

Dr Anup Das, Documentation Officer, Jawaharlal Nehru University, India

Panelists:

Mr Erik-Jan Van Kleef, Vice-President of Sales & Channel Management, IScience, Belgium

Dr Suneet Tuli, Dean, School of Engineering and Applied Sciences, Bennett University, Greater Noida, India; Ex-Dean, Research & Development, IIT Delhi, India

Dr Prabir G Dastidar, Scientist/Director, Ministry of Earth Sciences, Government of India

Ms Nidhi Srivastava, Fellow, Centre for Resource & Environment Governance, TERI, India

The session was chaired by Dr Klaus Tochtermann who explained how research remains unnoticed due to priced domain. Dr Klaus Tochtermann noted there is no incentive for the researcher to open their research data. He elaborated on the need for open access publications and sharing of research.

Dr Prabir G Dastidar spoke about how in last decade internet has changed the knowledge paradigm completely. He stated that there are plenty of data and we need to find out the data reduction techniques. Digital universe is growing exponentially. Dr Dastidar gave the examples of data reduction techniques adopted by library professionals. In the new paradigm of accessibility of data and data sharing, we need to find out the data reduction techniques. Data sharing and universal accessibility should focus on relevant information.

Mr Erik-Jan Van Kleef elaborated about the Gold Access (Paid access) and Green Access (Free Access) of IScience with adoption of Green access policy being better. Mr Kleef spoke about how the European countries have different views on access control. He talked about the overload of information and need for creation of a system for fast and instant access to research articles. For this proper policy and framework need to be created. Mr Kleef empathized on building

systems with right filters which are intelligent enough to meet the needs and can be converted into knowledge.

Dr Suneet Tuli discussed open access from the perspective of an academician. He said most of the problem has arisen due to disparity and information access is the only way to minimize the disparity. Academician can create knowledge but that need to translated into product/technology with the help of corporate/government. Dr Tuli also talked about the legal issues and licensing policy of the open access.

Ms Nidhi Srivastva talked about the legal issues and licensing policy of the open access. She discussed recent case of Delhi University and publisher's photocopy legal battle. Ms Srivastava also discussed about the timelines of data and confidentiality of data as there is a fear of capture of illegal data.

Dr Anup K Das, Co-Chair of the session, gave his views on how UNESCO is contributing to open access. Dr Klaus Tochtermann gave his closing remarks.

10.7 Smart ways in Digital Publishing (SE 4B), 15 December 2016



Event Associate Partner: Elsevier

Chair:

L Subramanyan, Director, Trivone Media Network, India

Lead Speaker:

Ms Heather Devereaux, Senior Director of Customer Engagement - Marketing, R&D Solutions, Elsevier, The Netherlands

Panelists:

Mr Pradeep Chopra, CEO, Digital Vidya, New Delhi, India

Mr Adam Koszary, Project Officer, The Museum of English Rural Life & Communications and Social Media Officer, Bodleian Libraries, UK

Mr Sheshadri Chatterjee, Asia Pacific Business Programme Manager, Microsoft Corporation, India

Mr L Subramanyan chaired the session and started with discussing various factors involved in digital publishing and marketing. Mr Subramanyan said there is a huge shift in content consumption from text to digital. He suggested the panelists to discuss more comprehensively about content marketing, mobile marketing Big data analytics and so on. He raised three pertinent questions:

How does your readers' diverse content consumption habit effect your content dissemination and consequently consumer influences?

How are you able to fathom your consumer communities and focus on marketing energy?

How are you able to differentiate between pop culture behaviors which is quick goes today and come out tomorrow?

Ms Heather Devereaux's presentation focused on the aspect of data storing in the digital age utilizing analytics, user behaviour, and customer feedback to prove ROI and to discover on my need. Ms Devereaux started with a quote "Stories are just data with soul"— by Dr B Brown. Usage data analysis based metrics is the important parameter for ROI of information. She also talked about the ScienceDirect platform which is a full text platform and its metrics. Ms Devereaux ended with the remark "Stories need data and data need stories and what is your story".

Mr Adam Koszary spoke more about social media tools and their impact on academic library. He expressed that social tools not only a medium of marketing tool, also a relationship tool. He talked about skills and relationship in making original content on variety of platform such as Facebook, Tumbler, Instagram, etc. For libraries, being on social media denotes building prestige, raising brand awareness and making relationship.

Mr Seshadri Chatterjee discussed on technology and human perspective. Mr Chatterjee spoke about the power of data analytics, CMS, and IOT. In his talk, Mr Chatterjee emphasized on the value addition of social tool use and the importance of image, video as against text reading.

Dr Dinesh K Gupta suggested that publishers must bear that cost for the author as the author becomes the brand ambassador for that journal in particular, if the article got citation. The content must be free and redistributed for the benefit of the information society.

Mr Pradeep Chopra elaborated on digital marketing based strategic plans and their subsequent parameters such as measurement of goal, objectives, benefit and its target audience. He emphasized on retargeting of consumer available through web media. Mr Chopra gave examples of Firstsource, Domino's, Facebook and Twitter demonstrating how they target and retarget their user with various attractive offers.

The panel discussed the outcome of the discussion that visualization based digital object like image, video gives more impact as compared to digital text.

10.8 Digital Convergence at the Bottom of the Pyramid (SE 5A), 15 December 2016



Chair:

Mr Gaurav Dwivedi, CEO, MyGov Cell, Ministry of Electronic and Information Technology, Government of India

Co-Chair:

Dr R K Sharma, UN Information Center, India

Panelists:

Mr Sachin Railhan, Head, Civil Society Empowerment Program, Digital Empowerment Foundation, India

Mr Alekhya Dutta, Associate Fellow, Energy Environment Technology Development, TERI, India

Mr Touseef Khan, Cofounder & CEO, Gramophone, India

Mr Krishna Kumar, CEO, CropIn, India

The Chair of the session, Mr Gaurav Dwivedi emphasized on e-governance initiative. Mr Dwivedi said that about 40 crore people have internet connection but people are not availing it at full potential. He spoke about Digilocker initiative of Indian government by which people can store documents digitally and can allow agencies to provide direct links rather than printed copies. Digital India e-governance initiative has a major impact on digital literacy.

Dr R K Sharma, the Co-Chair of the session, explained about developing the infrastructure by Digital India Program to cope up digital divide and to provide internet facility to all people. He said that through e-governance more than 100 post offices have been digitized and which shows digital governance is in transformation phase.

Mr Sachin Relhan spoke about how people have leverage digital content. He spoke about issues related to financial inclusion and crowdsourcing.

Mr Alekhya Dutta explained about rooftop initiative taken by TERI. He elaborated that Ministry of Urban Development has selected 60 smart cities out of 100 cities for rooftop power plant project.

Mr Tauseef Khan informed about Gramophone App which is helping farmers through technology. They are operating call centers and helping farmers through toll free number and product can be delivered at doorstep.

Mr Krishna Kumar spoke about Cropin which is an initiative to digitize farms at the intersection traceability, sustainability, mobility and cloud computing. Cropin use data science to help farmers become efficient businesses and respond to the challenges.

The session ended with the concluding remarks from the session co-chair.

The following Opinion Poll was conducted at the end of the session.

Opinion Poll XI: *What are best ways to reduce digital divide?*

The options were:

- A. Training and Skill Development
- B. Internet of Things
- C. Mobile Internet

The voting pattern of all participants (including the online viewers) revealed that 65% of respondents were in favour of Option A, i.e. training and skill development are the best ways to reduce digital divide (Figure 14).

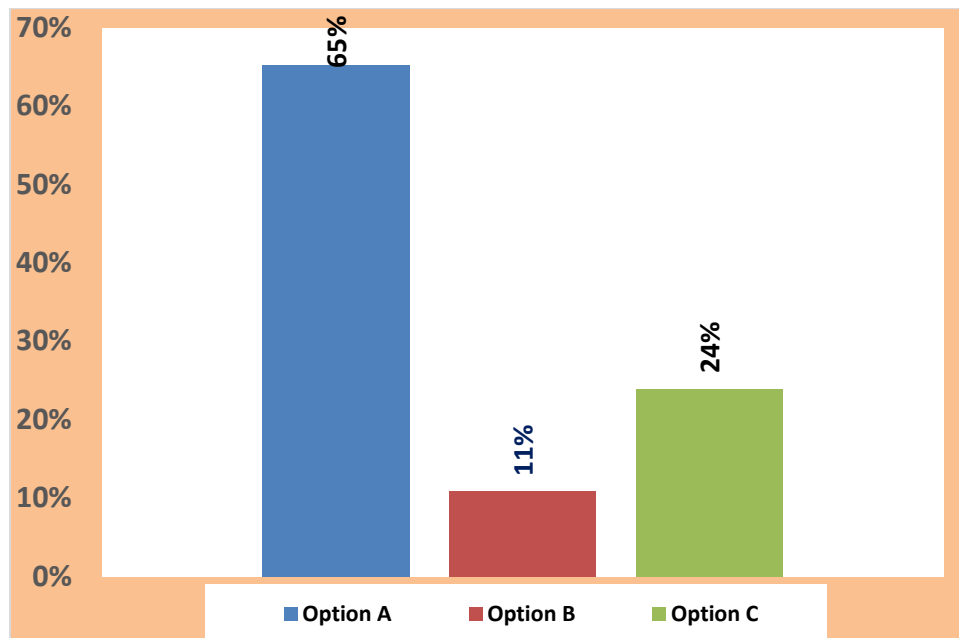


Figure 14. Opinion Poll XI

10.9 Academic Integrity on Digital World (SE 5B), 15 December 2016



Event Partner: Turnitin

Chair:

Prof. Michael Seadle, Professor, Humboldt University of Berlin, Germany

Co-Chair:

Mr Partha Bhattacharya, Joint Director, Directorate of Innovation and Technology Transfer,
Amity University, India

Lead Speaker:

Dr Zeenath Reza Khan, Instructor in the Faculty of Engineering and Information Sciences,
University of Woollongong, Dubai

Panelists:

Dr Ramesh Gaur, University Librarian, Jawaharlal Nehru University, India

Dr Savithri Singh, Principal, Acharya Narendra Dev College (University of Delhi), Creative
Commons, India

Dr Sandeep Chatterjee, Registrar, Indian Institute of Technology Delhi, India

Mr Neel Mason, Managing Partner, Mason & Associates, India

The session was chaired by Prof. Michael Seadle who stated that research integrity issues touch all parts of scholarly world, whether it is plagiarisms or data falsification or image manipulation.

Dr Zeenath Reza Khan elaborated about the need for developing a factor model to understand the impact factors on higher education for students. She also spoke misuse of the technology. Training should be provided at the school level about research integrity issues. A very good strong policy should be in place and adopted as part of work culture by faculty and students.

Dr Ramesh Gaur discussed about plagiarism in higher educational institutions. Dr Gaur mentioned two types of plagiarism, i.e. Accidental plagiarism and Willing plagiarism, and talked about the development of writing skills in Indian educational system and recommended English remedial courses.

Dr Savithri Singh spoke on creative common licenses to promote academic integrity. Dr Singh discussed on issues like creating content, use of copyright materials without permission, lack of awareness among academic of copyright issues, and components of common licensing, etc.

Dr Sandeep Chatterjee discussed about the higher education in India and elaborated about plagiarism.

Mr Neel Mason discussed regarding the intellectual property right law /copyright issues. Mr Mason mentioned that digital age is giving access to peoples and giving access to information is creating issues in plagiarism. Tools are required to deal with this issue. He also explained the Ideas vs. Expression and Availability vs. Permissions. Mr Mason further elaborated about copyright laws in details.

10.10 Transformation in Public Libraries (SE 6A), 16 December 2016





Event Partner: NASSCOM Foundation

Welcome and introduction:

Dr Shubhangi Sharma, Executive Director, IPLM Secretariat, NASSCOM Foundation, India

Special Address:

Mr Srikant Sinha, CEO, NASSCOM Foundation, India

Setting the Context and giving an Overview of the Public Libraries in India:

Mr B Shadrach, Independent Consultant, Bill & Melinda Gates Foundation; Asia Coordinator, Alliance for Affordable Internet

Changing Trends in the Public Library Space- Global Scenario :

Ms Donna Scheeder, President, International Federation of Library Associations, USA

Dr Shubhangi Sharma chaired the session and provided an overview of the Indian Public Libraries Movement (IPLM).

Dr Srikant Sinha, in his Special Address, elaborated about IPLM. He explained the importance of the public libraries. Dr Sinha spoke about Niti Ayog and The Rights of Persons with Disabilities Bill. As librarians are in the business of knowledge, Dr Sinha requested all librarians to foster the public libraries movement. He focused on the infrastructure of public library in India. Librarians need to create and build the infrastructure which can help communities. Libraries are the place where people should access services like Digidhan also.

Mr B Shadrach elaborated about with the public libraries problems in India. Issues regarding space problem, advent of IT, state libraries problem, etc were discussed. He requested librarians to take these problems as a challenge and convert these into opportunities. Mr Shadrach explained that IPLM has three characteristics:

1. Decentralization (Every one connecting to one level),
2. Idea of segregation (Different approaches from different place but should be connected with same idea), and
3. Interconnection (Togetherness).

Ms Donna Scheeder discussed about the role of public libraries in society. She said that librarians and libraries can change people's life by delivering high quality information services. Public library movement in India begins at very important time. Ms Scheeder explained about barriers and opportunities for libraries, regarding Infrastructure, gender gap, affordability and awareness. Librarians should get ready to tackle these problems. She also talked about general trends in public libraries transformation and tools & techniques for libraries. There are some common issues which need to be considered to bridge the digital divide, such as keeping people at the centre, increased advocacy of the librarians and Impact assessment.

Panel Discussion 1 - Public Library: A Platform for Knowledge And Integrated Solutions For Development

Moderator:

Dr Usha Munshi, Librarian, Indian Institute of Public Administration, India

Panelists:

Dr Surinder Kumar, Senior Technical Director, Digital Archiving and Management Group, National Informatics Centre, India

Mr Himanshu Giri, COO, Pratham Books, India

Mr Liby Johnson, Technical Specialist Skills and Livelihood, United Nation Development Program

Ms M Naina Rani, World Health Organization

At the outset, Dr Usha Munshi, highlighted that one of the smartest target of SDG is *Information for integrated decision making and participation*. Collaboration and partnership is very important and public libraries are key as they help us in knowledge democratization through building collaborating communities. Dr Munshi stated that public libraries are transforming lives because knowledge is the source of development which is available in these libraries irrespective of all barriers because they reach the unreached.

Ms M Naina Rani spoke about role of public libraries in public health programmes. She also talked about different WHO projects across the country and the role of public libraries reaching the masses to spread the message of awareness.

Mr Liby Johnson discussed about public libraries' role for skills and livelihood development for rural people and other communities. There is great potential to develop partnership with public libraries in India to promote skill and livelihood development programmes. Mr Johnson also elaborated about the role on UNDP in this aspect.

Dr Surender Kumar shared his experiences about modernization of Delhi Public Library.

Mr Himanshu Giri provided a brief overview about Pratham Books, India.

Panel Discussion 2 - Role of Librarians Beyond Libraries: Way Forward

Moderator:

Mr Santosh Abraham, Vice President, NASSCOM Foundation, India

Panelsits:

Ms Neeza Singh, INELI Innovator, Chandigarh

Mr Rais Ahmed

Ms Shobana, INELI Innovator, Kerala

Mr Mudassir Ashraf, Librarian, Distrivt Library, Anantnag

Dr Kalpana Dasgupta, Advisory Board Member at READ Global, Former Director, Central Secretariat Library, Government of India

Dr Jagtar Singh, Professor and Head, Department of Library and Information Science, Punjabi University, Patiala, India

Mr Santosh Abraham opened the session with his introductory speech on the panel topic. Libraries in India are not able to catch up with the technologies and they need to be upgraded with the help of training. Policy changes also require the catch up the millennial users.

Ms Neeza Singh discussed about The International Network of Emerging Library Innovators (INELI). This programme is run in India by MSRRF. It is a part of Bill & Melinda Gate Foundation. INELI conducts online programmes like Time Management, Goal Setting, etc. Through these programmes, librarians all over India and get opportunities to connect with each other.

Mr Rais Ahmed shared his journey of converting almost dumped library into a live Public Library.

Ms Shobhna elaborated about the public libraries in Kerala. These libraries are centres where people sit and discuss political and cultural events.

Mr Mudassira Ashraf emphasised on financial support from government and need of training programs for smooth running of libraries. He raised the issues of library legislation act in J&K State which is not implemented there.

Dr Jagtar Singh discussed about the holistic view of public library. Public Library is virtually starving these days and there is a critical need to work on policy level. Dr Singh hoped that the National Mission on Library can create Centre for Excellence for development of Public Libraries.

Dr Kalpana Dasgupta observed that India has good policies; the problem lies in implementation, budget constraints, staff recruitment at lower level, skill development and other such issues.

Academic and public library should work together as *Joint Use Libraries* which will help students as well as distant learner.

10.11 Application of Internet of Things (IoT) for SDGs (SE 6B), 16 December 2016



Event Partner: ONGC

Chair:

Dr Neena Pahuja, Director-General, ERNET India

Lead Speakers

Mr Satyajit Das, Programme Manager, Oil and Natural Gas Corporation, New Delhi, India

Dr Shivkumar Kalyanaraman, Research Director, IBM Research, India

Panelists:

Dr Arijit Mukherjee, Senior Scientist, Embedded Systems & Robotics Research, Tata Consultancy Services, India

Ms Sudakshina Ghosh, Director, Automotive Industry, SAP India

The Chair for the session, Dr Neena Pahuja, highlighted the concept of Internet of Things (IOTs) for Sustainable Development Goals (SDGs). She explained how IOTs have become an integral part of every citizen of the country -- starting from their home, office, industries, and so on. Dr Pahuja gave details about various government and corporates projects such as Digi-Dhanprogrammes, Swach Bharat, Smart Agriculture, Smart Health etc. She also explained how IOT is supporting the oil & gas industries.

Dr Shivkumar Kalyanaraman's talk focused on how we can apply IOT in energy and transportation sectors. He emphasized the visualization (share) of IOTs to increase the productivity in energy sector by putting the example of URJAR innovation project, repackaging system and e-waste management system. Dr Kalyanaraman emphasized that the pathway to success is all about IOTs applications, idea creation, sharing, and re-use of those applications in everyday life.

Mr Satyajit Das highlighted the ICT infrastructure in ONGC systems and the various related applications of IOTs to meet the industrial needs. Mr Das also spoke about IT applications in deployment and existing infrastructure at ONGC.

Mr Arijit Mukherjee stressed on the good things which IOT provides and related challenges. IOT applications have touched all aspects of human being which include the day-to-day activities.

Ms Sudakshan Ghose elaborated on the IOTs drivers and their connections and monitoring various aspects like Smart City, Digital Farming and Digi System. Ms Ghose spoke on the need for producing end to end close loop monitoring system.

10.12 Digitization & Economic Development (SE 7Bi), 16 December 2016



Chair:

Mr Prabir Sengupta, Distinguished Fellow and Director, Knowledge Management Division, TERI, India

Panelists:

Mr Rajat Kathuria, Director, ICRIER, India

Mr Kiran Karnik, Chair, Oxfam India; Chairman, Indraprastha Institute of Information Technology; President, India Habitat Centre, India

Dr Biswajit Dhar, Professor, Jawaharlal Nehru University, India

The Chair for the session, Mr Prabir Sengupta highlighted that digitisation is certainly a good instrument in economic growth. Mr Sengupta said that we are in the midst of greater industrial revolution and human history and digitization is enabling efficient use of Information technology and ITES. Besides, digitization promotes economic development by ensuring a high reduction in transition cost thus bringing down cost of everything including all services. The Smart City Concept also relies heavily on digitization and meaningful use of information technology. Mr Sengupta further stated that there is an uneven distribution impact due to digitization, nearly around 60% of world population are still offline and cannot take part in the digitization.

Mr Rajat Kathuria highlighted the benefits of digital economy and covered important issues such as inequities in systems, policy actions and spreading digitisation. Mr Kathuria said that there are huge benefits of digitization as well as associated risks such as job risk, regulatory risk and cyber risk. Regulatory risk is always high in India. The government and service provider should pay proper attention to the Issues such as cyber threat, privacy and data security.

Mr Kiran Karnik stressed that digital economy has huge possibilities and prospects in long term. We are heading from highways towards i-ways. Mr Karnik further stated that this is indeed a part of digital revolution and the biggest resource of this century is information. As few years back, oil and gas were the biggest natural resource and those countries that possessed it were rich. Same is the case with information; in coming few decades, information and data will be the biggest resources and those countries that have it and add value to it are going to be rich countries.

Dr Biswajit Dhar emphasized that digitization is a pathway to economic growth and development. Digitisation has huge impact on manner we are doing business. Dr Dhar elaborated on trade issues related to digitization and said that in India we are yet to be prepared for the changes. The role of government is very important in identifying challenges such as capacity development, training needs and greater awareness on technology. Dr Dhar further stated that there is huge gap between what is happening at policy level and what is being taught in universities. This gap needs to be filled up.

The session ended with closing remarks by the chair. At the end of the session the following opinion poll was conducted.

Opinion Poll XII: Most important enabling factor for reaping the benefit of digitization

The options were:

- A. Government Regulation
- B. Government Facilitation
- C. Government Incentives

According to respondents, Option B and Option C (i.e. Government facilitation and incentives) are the important enabling factors for reaping the benefit of digitization (Figure 15)

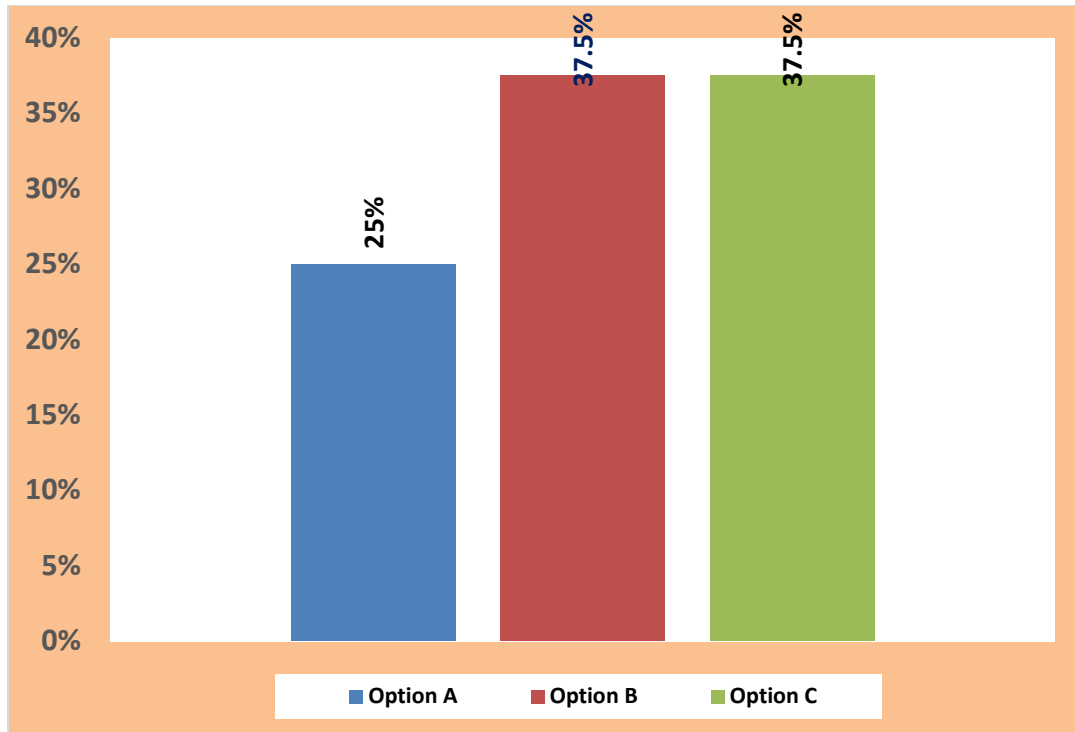


Figure 15. Opinion Poll XII

10.13 Capacity Building Initiative in E-Governance (SE 7Bi), 16 December 2016





Chair:

Mr Ashwini Kumar Sharma, Director General, National Institute of Electronics & Information Technology, India

Panelists:

Dr Piyush Gupta, Associate Vice President, National Institute for Smart Government

Dr Charu Malhotra, Professor, Indian Institute of Public Administration, India

Mr Lovneesh Chanana, Vice President, Government Relations, SAP India

The session was chaired by Mr Ashwini Kumar Sharma who elaborated on enhancement of capacity building to reap the real fruit of e-governance system on PAN India level. The Chair stressed that two major stakeholder are involved in in e-governance -- Government or policy-makers and citizens or service availers.

Mr Piyush Gupta talked about the larger perspective of capacity building. He observed that capacity building is always misunderstood by training but It is has four major components which are:

1. Institutional infrastructure in place
2. Policy and guidelines
3. Training
4. Knowledge management.

These components along with the larger ecosystem have the power to transform anything. Training culture should be converted into learning culture. Mr Gupta concluded his talk with Benjamin Franklin's lines "*Tell me and I forget. Teach me and I remember. Involve me and I learn*".

Dr Charu Malhotra noted that that along with capacity building we should focus on awareness also. Two prompt approaches are required; one is capacity building of officers who have to

implement e-governance programmes and other is spreading awareness among citizens about e-governance initiatives. Dr Malhotra further shared her experience of building capacity of trainers and e-governance programmes.

Mr Lovneesh Chanana spoke the role industries can play in capacity building. The topic of his talk was *Collaborating to Move from Capacity Building to a Culture of ICT Adoption*. Mr Chanana emphasized on creating a culture where capacity is byproduct.

All the panelist highlighted the fact that government, corporates and industries must initiate capacity development projects that can led to empowerment of all people.

11 Valedictory Session



11.1 Welcome Address

Delivering the Welcome Address, Mr Ashok Chawla, Chairman, TERI, congratulated everyone on the success of ICDL 2016. Mr Chawla highlighted the crucial role of libraries and knowledge workers in bridging the digital divide. Smart libraries are at the heart of knowledge societies as they enable people to access, share, and apply knowledge. Mr Chawla stated that innovative and modern technologies like mobile technologies, social media, and data analytics are increasingly playing a key role in knowledge management and decision support system.

11.2 Special Address

Dr Ajay Mathur, Director-General, TERI, spoke about digital initiatives and role of libraries. Dr Mathur emphasized that free and easily accessible digital knowledge for everyone contributes to the growth of the society and country. Hence it is crucial to create a system for accessible knowledge through digitization.

11.3 Special Address

Mr Prabir Sengupta, Distinguished Fellow and Director, Knowledge Management Division, TERI, expressed happiness on the successful conduct of ICDL 2016. He noted that the conference proceedings and outcomes will contribute to the 'Digital India' slogan.

11.4 Best Paper Awards

Dr Michael Seadle, Chair of the Best Paper Award Committee, announced the best papers presented at the conference.

Winners of Best Paper Awards

1. Libraries on Fingertips: A case study of Indian Institute of Management Lucknow-Noida Campus
Author: Kavita Chaddha
2. Empirical Analysis of Indian Political Ecosystem as an Application of Generic Textual Analysis
Author: Madhu Nadig
3. Large-scale Metadata Harvesting – Tools, Techniques and Challenges: A Case Study of National Digital Library (NDL)
Co-Authors: Samrat Guha Roy, B Sutradhar, Partha Pratim Das

11.5 Best Poster Awards

Prof. Jean Marc Comment, Chair of the Best Poster Award Committee, announced the best posters presented at the conference.

Winners of Best Poster Awards

1. Changing Landscape and Future of Open Access in India
Co-Authors: Vrushali Dandawate, Sridhar Gutam
2. Digital Preservation and Access Management: The CSSSC's step into the Virtual World
Co-Authors: Jayeeta Majumder, Kamalika Mukherjee
3. Knowledge Discovery and Open Data Mining in the Linked Data Cloud: The Great Digital Divide in the Indian Context - The Bold Truth
Author: Dhanalakshmi Shankar Subramanian

11.6 ICDL 2016 Recommendations

Prof. Gobinda Chowdhury, Chair, ICDL 2016 Recommendations Committee, presented the recommendations of the conference that focused on policies, ICT Infrastructure & systems, user engagement, services and capacity development.

Please see Appendix `J` for the full recommendations.

ICDL 2016 Recommendations *Preamble*

- Data and information form the foundation of all activities related to SDGs
- Access to information and data should be a universal right
- No one left behind is the motto
- Data and information are the driver for
 - Research, education and lifelong learning
 - Business, government and decision-making in every sector
 - Empowering everyone in society including youth, women and people with special needs

11.7 Valedictory Address



The Valedictory Address was delivered by Dr Ajay Kumar, Additional Secretary, Ministry of Electronics & Information Technology, Government of India. In his address, Dr Kumar emphasized on the role of libraries in local language translation and content development in local languages. He said that libraries can be key players for ‘Digital India’ initiative.

A copy of the full transcript is attached as Appendix `K`.

11.8 Vote of Thanks



The Vote of Thanks was proposed by Dr Shantanu Ganguly, Fellow, Knowledge Management Division, TERI. Dr Ganguly elaborated on the outreach of the conference sessions through various medium including online and social media. He acknowledged the contributions of all stakeholders in the successful completion of ICDL 2016.

12 Collaborators and Sponsors

ICDL 2016 received widespread support from various government bodies, non-government agencies, academic institutes, international bodies, corporates and publishers.

12.1 Partners

NASSCOM Foundation; Ministry of Electronics and Information Technology, Government of India ; and Oil and Natural Gas Corporation Limited were the partners of the event.

12.2 Associates

Commonwealth Education Media Centre for Asia; Department of Biotechnology, Government of India; Indian Institute of Technology Kharagpur; and United Nations Educational, Scientific and Cultural Organization were the associates of ICDL 2016.

12.3 Co-Associates

The co-associates of the conference were British Council, India; Council of Scientific and Industrial Research; Defence Research and Development Organisation; Embassy of Israel in India; Goethe Institut – Max Mueller Bhawan; Indian Council of Medical Research; New Energy and Industrial Technology Development Organization.

12.4 Knowledge Collaborators

International Federation of Library Associations and Institutions (IFLA), USA was the Knowledge partner of ICDL 2016. ICT Academy, Tamil Nadu and Shaheed Rajguru College of Applied Science for Women, University of Delhi were the Knowledge Associates

12.5 Sponsors

The conference was sponsored by several organizations at different levels. *ICDL 2016 Gold Sponsors* were American Chemical Society, Balani Infotech Pvt. Ltd, IGroup Infotech India Pvt. Ltd, Turnitin. *ICDL 2016 Silver Sponsors* were SAGE Publishing and Ninestars.

The collaborators for Special Events and Workshops were Begell House, PowerCreator, Elsevier and SpadeWorx.



IndiaStat was the sponsor for the ICDL Signature Board.

12.6 Exhibitors





An international exhibition was hosted in parallel to conference where 34 exhibitors showcased their products and services. Apart from institutes like IIT Kharagpur, DELNET and Digital Empowerment Foundation, the exhibitors included international online publishers, DL software companies, and other information providers. The Exhibition witnessed much interest amongst the participants as the stalls displayed latest services, products and tools in the digital library fields. A lucky draw was organized on the last day of the event.

The details of the partners, associates, sponsors and exhibitors are attached as Appendix 'L'.

13 Publications

13.1 Pre-Conference Proceedings

Two volumes of pre-conference proceedings in printed and electronic form were given to all participants at the time of registration. The volumes include invited and contributed full papers besides abstracts of poster presentations. Besides, documentation on Tutorials were distributed among the participants.

13.2 Conference Guide

The conference guide was printed and disseminated to all participants. The guide contained details about programme, speakers, collaborators, and other useful information.

13.3 Conference Bulletins

For the duration of the conference, conference bulletins highlighting the days' proceedings were distributed on the following day prior to commencement of the conference for the information of the participants. A copy of the three days bulletins are attached as Appendix 'M'.



14 Promotion and Outreach

14.1 Website

The ICDL 2016 website <<http://www.teriin.org/events/icdl>> included details of the conference programme, speakers, sponsorship, registration, paper submission, committees, and all other useful information.



14.2 ICDL 2016 Mobile App

The conference Mobile App was developed to disseminate all information related to the conference programme, speakers and other useful information. The App could be downloaded at Google and Apple Playstores. The App was downloaded by 200 stakeholders to know more details about ICDL 2016.[

During the conference dates, the App helped the delegates to check the schedule of the sessions. The delegates also used the App to give their votes during the Opinion Polls conducted during the conference.



14.3 Media Coverage

The conference received extensive media coverage in newspapers and online media as provided below. Copies of few prominent media coverage, both print and online, are attached as Appendix 'N'.

1. Digital knowledge management systems must be collaborative and focus on users!
[Business Standard](#), 15 December 2016
[ANI](#), 15 December 2016
[New Kerala](#), 15 December 2016
[News Now](#), 15 December 2016

2. Digital Conference
[The Pioneer](#), 14 December 2016
3. TERI digital libraries conference opens with 'knowledge' roadmap for Smart Future
[Web India 123](#), 14 December 2016
4. Digital technology must for sustainable socio-economic outcomes
[Can-India News](#), 14 December 2016
5. TERI digital libraries conference opens with 'knowledge' roadmap for Smart Future
[India Live Today](#), 14 December 2016
6. Digital technology must for sustainable socio-economic outcomes
[The Economic Times](#), 14 December 2016
7. TERI digital libraries conference opens with 'knowledge' roadmap for Smart Future
[Sify](#), 14 December 2016
8. TERI digital libraries conference opens with a 'knowledge' roadmap for Smart Future
[India Blooms](#), 14 December 2016
9. TERI digital libraries conference opens with knowledge roadmap for smart future
[ANI](#), 14 December 2016
10. Digital technology must for sustainable socio-economic outcomes
[The Frustrated Indian](#), 14 December 2016
11. TERI digital libraries conference opens with a knowledge roadmap for Smart Future
[India Education Diary](#), 14 December 2016
12. Digital knowledge management systems must be collaborative and focus on users
[India Education Diary](#), 14 December 2016
13. International Conference on Digital Libraries
[India Today](#), 13 December 2016
14. International Conference on Digital Libraries
[Business Standard](#), 13 December 2016
15. International Conference on Digital Libraries
[PTI News](#), 13 December 2016
16. Digital Vidya is Speaking On Smart Future at ICDL 2016
[Digital Vidya](#), 9 December 2016

The social media also played a crucial role in disseminating the deliberations at ICDL 2016. The live updates of ICDL 2016 were posted in Twitter and reached to 1.5 million people over the course of 4 days of the event.

15 Post-Conference Feedback

The conference team received numerous feedbacks from participants, speakers and collaborators expressing their appreciation and suggestions on the successful completion of ICDL 2016. Please see Appendix `O` for details of feedback received.

16 Conclusion

ICDL series has generated widespread participation and great enthusiasm amongst the library and information science and technology professionals around the world. It has created great awareness on the importance of digitization in the DL community both in India and abroad. In addition to these stakeholders, ICDL 2016 has attracted extensive participation from associated emerging disciplines that focus on cutting edge topics including big data analytics, social media tools, Internet of Things (IoT), among several others. The conference was a premier event for information professionals who wanted to develop essential skills, network with colleagues, explore noteworthy trends in knowledge and information management, and access leading information product and service providers. ICDL 2016 has facilitated the bridging of knowledge gaps between developing and developed countries; initiated capacity building activities in various issues connected to digital libraries; provided a forum for facilitating useful interaction amongst information science, data science, knowledge management and technology professionals; and most important of all, facilitated the formulation of recommendations on digitization technologies, Acts, and policies in India. It has also helped in getting together about 600 professionals across the globe from the fields of knowledge management, digital library, data analytics, social media, publishing industry and information providers on a single platform and encouraged the sharing of experiences, concerns, and ideas.

The conference hosted an exhibition of 32 distinguished publishers, software companies, and online service providers from India and abroad who presented the latest technological developments, online services and initiatives throughout the world. As the conference was live streamed across the globe for widespread participation, the various sessions boosted the enthusiasm among the government as well as information science and technology professionals on the importance of the focusing on knowledge trends that can lead to a smart future. It brought out the present status and the latest developments and techniques all over the world to comprehend the present knowledge trends.

DETAILS OF CONFERENCE COMMITTEES

Patrons

- **Shri Ashok Chawla**, Chairman, The Energy & Resources Institute, India

Conference Chair

- **Dr Ajay Mathur**, Director General, The Energy & Resources Institute, India

Conference Organizing Secretaries

- **Dr P K Bhattacharya**, Fellow and Area Convenor, The Energy & Resources Institute, India
- **Dr Shantanu Ganguly**, Fellow, The Energy & Resources Institute, India

Advisory Committee

Co-Chairs

- **Shri Prabir Sengupta**, Director & Distinguished Fellow, The Energy & Resources Institute, India
- **Shri Ashutosh Sharma**, Secretary, Department of Science and Technology, Government of India, India
- **Shri Narendra Kumar Sinha***, Secretary, Ministry of Culture, Government of India, India
- **Shri R Subrahmanyam**, Additional Secretary (TE), Department of Higher Education, Ministry of Human Resource Development, Government of India, India
- **Smt Aruna Sundararajan**, Secretary, Department of Electronics and Information Technology, Government of India, India

Members

- **Dr S Chatterjee**, OSD to Secretary, Ministry of Electronics and Information Technology (MeitY), Government of India, India
- **Shri Srinath Komarina***, Senior Vice President, YES BANK Ltd, India
- **Dr Ajay Kumar***, Additional Secretary, Ministry of Electronics and Information Technology (MeitY), Government of India, India
- **Dr Ganesh Natarajan***, Executive Chairman & Founder, 5F World; Chairman, NASSCOM Foundation & Global Talent Track, India

Steering Committee

Co-Chairs

- **Prof Uma Kanjilal**, Professor, Department of Library and Information Science, School of Social Sciences, IGNOU, India
- **Shri Sanjiv Mittal**, Joint Secretary, Ministry of Electronics and Information Technology (MeitY), Government of India, India

Members

- **Dr Praveen Arora**, Adviser & Head (NSTMIS Division), Department of Science & Technology, Government of India, India
- **Shri K.K. Banerjee**, Project Director (Archives), (EZ & NEZ), Prasar Bharati, India
- **Dr Arun Kumar Chakraborty***, Director General, Raja Rammohun Roy Library Foundation (RRRLF), India
- **Dr Anindya Chatterjee**, Regional Director, International Development Research Centre, India
- **Dr Niladri Chatterjee**, Professor, Department of Mathematics, Indian Institute of Technology, India
- **Shri B G Chaurasia***, Corporate Communication, Oil and Natural Gas Corporation, India
- **Dr Kirsty Crawford**, Director, Library and Digital Information Services, India, British Council Division, British High Commission, India
- **Shri P Das***, Deputy Director General (Technical & International Relation), Prasar Bharati, India
- **Prof. Partha Pratim Das**, Professor, Department of Computer Science & Engineering and Joint Principal Investigator, National Digital Library Project, Indian Institute of Technology- Kharagpur, India
- **Dr S S Garg**, Scientist G, Head of International Cooperation - Bilateral Division, Ministry of Electronics and Information Technology (MeitY), Government of India, India
- **Dr H K Kaul**, Director, DELNET, India
- **Dr Syed Kazi**, Deputy Director, Digital Empowerment Foundation, India
- **Dr Sanjaya Mishra**, Education Specialist (eLearning), Commonwealth of Learning (CoL), Canada
- **Dr T Madhan Mohan**, Adviser, Department of Biotechnology, Ministry of Science & Technology, Government of India, India
- **Shri Osama Manzar**, Founder-Director, Digital Empowerment Foundation, India
- **Shri Sudip Mozumder***, Adviser, External Affairs, World Bank, India
- **Dr Laila Mulgaokar**, Field Director, U S Library of Congress Office, American Center, India
- **Shri B P Prakash**, Global Head, Information Resource Centre, Tata Consultancy Services, India
- **Shri Pankaj Rag***, Joint Secretary, Ministry of Culture, Government of India, India

- **Dr Shahid Rasool**, Director, Commonwealth Educational Media Centre for Asia (CEMCA), India
- **Smt. Ute Reimer-Bohner**, Director Information and Library Services , South Asia, Goethe-Institut, India
- **Shri Inder Sen**, Ministry of Electronics and Information Technology (MeitY), Government of India, India
- **Shri Ashwani Sharma**, Country Head, University Relations, Google India Pvt. Ltd, India
- **Shri Himanshu Shekhar***, Assistant Vice President, YES BANK Limited, India
- **Shri M Sivakumar**, Chief Executive Officer, ICTACT Academy , India
- **Shri V Srinivas**, Deputy Director (Administration), All India Institute of Medical Sciences, India
- **Dr B Sutradhar**, Librarian, Central Library, Indian Institute of Technology, India
- **Shri R Thyagarajan**, Head, Administration and Finance, Commonwealth Educational Media Centre for Asia (CEMCA), India
- **Shri Al-Amin Yusuph**, Adviser Communication and Information, UNESCO New Delhi Cluster Office for Bangladesh, Bhutan, India, Maldives, Nepal and Sri Lanka. UNESCO, India

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Co-Chairs

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- **Dr Frederic Blin**, Preservation and Heritage collections, Former Member of the Governing Board of the International Federation of Library Associations and Institutions (IFLA), Bibliotheque nationale et universitaire de Strasbourg, France
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- **Dr Nalini Mahajan**, Medical Library & Web Master, Marianjoy Rehabilitation Hospital, USA
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- **Dr Akira Meada**, Department of Media Technology, College of Information Science and Engineering, Ritsumeikan University, Japan
- **Dr Paul Nieuwenhuysen**, Vrije Universiteit Brussel, Belgium
- **Dr Anna Maria Di Sciullo**, Department of Linguistics, Interface Asymmetry Lab, University of Quebec in Montreal, Canada
- **Dr Klaus Tochtermann**, ZBW - Leibniz Information Centre for Economics and Professor for Media Informatics at Kiel University, Germany
- **Dr Ricardo da Silva Torres**, Institute of Computing (IC), University of Campinas (UNICAMP), Brazil

National

- **Shri Ainul Abedin**, Deputy Manager, Habitat Library & Resource Centre, India
- **Shri Abdulla al-Modabber**, Assistant Librarian, Prof G K Chadha Library, South Asian University, India
- **Shri Mandar Bhagwat**, Co-founder, Director and CTO, SpadeWorx Software Services, India
- **Dr Kalyan Kr. Bhattacharjee**, Deputy Registrar, Indian Institute of Technology Delhi, India
- **Shri Sumandro Chattapadhyay**, Research Director, The Centre for Internet and Society, India
- **Dr S Siva Chidambaram**, Chief Librarian, All India Institute of Medical Sciences, India
- **Shri Sanjit Choudhury***, Deputy Director, Ministry of Electronics & Information Technology (MeitY), Government of India, India
- **Smt Kalpana Dasgupta**, Head, READ India Advisory Board, India
- **Dr Partha De**, Librarian-In-Charge (Central Library), Indian School of Mines, India
- **Dr Satendra Singh Dhaka**, Director (Library & Information Centre), Ministry of External Affairs, Government of India, India
- **Dr Ramesh C Gaur**, University Librarian, Jawaharlal Nehru University, India
- **Dr J N Gautam**, Pro-Vice Chancellor, School of Studies in Library and Information Science, Jiwaji University, India

- **Dr S B Ghosh**, Professor Emeritus, Kalyani University, India
- **Dr P R Goswami**, Director (Library & Information) Kalanidhi, Indira Gandhi National Centre for the Arts, India
- **Dr Dinesh K Gupta**, Professor of Library & Information Science and Director (Research), Vardhman Mahaveer Open University, Kota, India
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- **Dr P K Jain**, Librarian, Institute of Economic Growth, University of Delhi, India
- **Dr Medha Joshi**, Head, Department of Library Science, Tata Memorial Hospital, India
- **Dr Arpan Kumar Kar**, Assistant Professor, Department of Management Studies, Indian Institute of Technology Delhi, India
- **Dr Debal C Kar**, University Librarian, Ambedkar University, India
- **Dr Venkata Kesavan**, Associate General Manager, Times Archives & Knowledge Centre, Bennett Coleman & Co. Ltd, India
- **Dr H Anil Kumar**, Librarian, Indian Institute of Management, Ahmedabad, India
- **Dr Giridhar Kunkur**, Librarian & Unit Chief, Publications & Media Relations, Birla Institute of Technology & Science, India
- **Dr Devika P Madalli**, Professor, Documentation Research and Training Centre, Indian Statistical institute, India
- **Dr M Madhusudhan**, Associate Professor, Department of Library and Information Science, University of Delhi, India
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- **Dr Kavi Mahesh***, Director, KnOE, Centre for Knowledge and Ontological Engineering, Professor, Dept. of Computer Science, Peoples Education Society, India
- **Dr S Majumdar**, Chief Librarian, India International Center, India
- **Smt Sunita Malhotra**, Information Specialist, The World Bank, India
- **Dr R N Malviya**, Librarian, Lingaya's University, India
- **Shri G R Meena***, Deputy Director, E-Governance Group, Ministry of Electronics & Information Technology (MeitY), Government of India, India
- **Dr K R Murali Mohan**, Scientist – G, Department of Science & Technology, Ministry of Science & Technology, Government of India, India
- **Dr Usha Mujoo-Munshi**, Librarian, Indian Institute of Public Administration, India

- **Dr Akhtar Parvez**, Librarian, Indian Institute of Management (Indore), India
- **Dr A R D Prasad**, Professor and Head, Documentation Research & Training Centre, Indian Statistical Institute, India
- **Mr Ram Pratap**, Knowledge Administrator, McKinsey Knowledge Centre India Private Limited, India
- **Dr Pravakar Rath**, Dean and Professor, Department of Library & Information Science, School of Economics, Management & Information Science, Mizoram University, India
- **Shri Dharmendra Sachan**, Deputy General Manager, Information Technology Group, Export-Import Bank of India, India
- **Dr Ratna Sanyal**, Professor, Indian Institute of Information Technology, India
- **Shri Anirban Sarma**, National Programme Office, Communication and Information Sector, UNESCO, India
- **Dr N V Satyanarayana**, Chairman, Informatics India Limited, India
- **Smt Neeti Saxena**, Manager, Library & Information Services, North India, British Council Division, British High Commission, India
- **Shri Phet Sayo**, Senior Program Officer, Networked Economies, International Development Research Centre, India
- **Dr B Shadrach** Senior Advisor, NASSCOM Foundation, India
- **Dr Jaideep Sharma**, Professor, School of Social Sciences, Indira Gandhi National Open University (IGNOU), India
- **Dr R K Sharma**, Librarian, United Nations Information Centre, India
- **Dr A M Siddiqui**, Representative, New Energy and Industrial Technology, Development Organization (NEDO), India
- **Dr Dharam Veer Singh***, University Librarian, Head DULS, Central Library, University of Delhi, India
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DETAILS OF CONFERENCE PROGRAMME

Day 1: Tuesday, 13 December 2016			
8.00 am onwards		Registration for Tutorials, Workshops, and Conference	
10.15am–1.00 pm		Pre-Conference Tutorial Sessions	
Tutorial T1	Tutorial T2	Tutorial T3	Tutorial T4
(Silver Oak I, Ground floor)	(Silver Oak II, Ground floor)	(Jacaranda I, First floor)	(Jacaranda II, First floor)
<p><i>Creation and Utilization of OER for Higher Education</i></p> <p>Commonwealth Educational Media Centre for Asia</p> <p>1. Vunnam Venkaiah</p> <p>Former Vice-Chancellor, Jubilee Hills, Hyderabad, India</p> <p>2. R Thyagarajan</p> <p>Head and Finance Manager, CEMCA</p> <p>3. Manas R Panigrahi</p> <p>Programme Officer Education, CEMCA-COL, India</p>	<p><i>Information Discovery using Search by Image</i></p> <p>Paul Nieuwenhuysen</p> <p>Professor, Vrije Universiteit Brussel, Belgium</p>	<p><i>Application R-Software in Big-data Analytics</i></p> <p>Moonis Shakeel</p> <p>Assistant Professor (Senior Grade), Jaypee Business School, India</p>	<p><i>Big Data Analytics on Visualize Quasi-Structured Data and Semi-Structure Data</i></p> <p>Shanmughavel Somu</p> <p>Senior Manager (IT) – Training & Research, ICT Academy of Tamil Nadu, India</p>

1.00 pm–1.15 pm	INAUGURATION OF EXHIBITION <i>Venue: Charminar</i>
1.15 pm–2.00 pm	Networking over Lunch
2.00 pm–3.00 pm	Visit to Exhibition
3.00 pm - 4.00 pm	CONFERENCE INAUGURATION <i>Venue: Stein Auditorium</i> <i>Welcome Address</i> Shri Ashok Chawla Chairman, TERI <i>Special Address</i> Dr Ajay Mathur Director General, TERI <i>Special Address</i> Shri Prabir Sengupta Distinguished Fellow and Director, Knowledge Management Division, TERI <i>Inaugural Address</i> Ms Donna Scheeder President, International Federation of Library Associations and Institutions, USA <i>Vote of Thanks</i> Dr P K Bhattacharya Organizing Secretary, ICDL 2016
4:00 pm – 5.30 pm	SE 1: Special Event National Digital Library of India <i>Venue: Stein Auditorium</i>
5.30 pm onwards	Tea

Day 2: Wednesday, 14 December 2016

8.00 am–9.00 am		Conference Registration	
9.00 am–10.45 am		TECHNICAL SESSION 1	
Session 1A (Stein Auditorium)	Session 1B (Silver Oak, Ground floor)	Session 1C (Jacaranda I, First floor)	Session 1D (Jacaranda II, First floor)
<p><i>Digital Library - Development, Architecture and Management</i></p>	<p><i>Digital Literacy: Standards and Policy</i></p>	<p><i>Transformation towards Smart Libraries</i></p>	<p><i>Collaborative Knowledge Creation Crowdsourcing</i></p>
<p>CHAIR: H K Kaul Director DELNET and President, The Poetry Society, India</p> <p>CO-CHAIR: R N Malviya Library Consultant, India</p> <p>INVITED SPEAKER: Shalini R Urs <i>Engaging Users for Collection Management</i></p> <p>GUEST SPEAKER: M Madhusoodhan <i>Digital Library: User Perspectives and Institutional Strategies</i></p> <p>CONTRIBUTED PAPERS:</p> <p>1. Bijoy Ketan Panda <i>Digital Marketing of Services and Products in Library and Information Centers</i></p> <p>2. Shubhada Apte <i>Good Practices of Achieving Effective Customer Relationships Using Extended and Smart Outreach Activities</i></p> <p>3. Parveen Arora, Reeta Sharma, and T</p>	<p>CHAIR: Jagdish Arora Director, INFLIBNET, India</p> <p>CO-CHAIR: Sanjay K Bihani Library Information Officer, Ministry of External Affairs, Government of India</p> <p>GUEST SPEAKERS: Bablu Sutradhar <i>Digital Literacy Policy and Standards in India: an Overview</i></p> <p>Dilara Begum <i>Digital Library Network of South Asia: A special focus on free and open source software (FOSS) movement</i></p> <p>M Abu Sayeed <i>Information management and knowledge for development in Public Policy: Importance of information resource centre (IRC) in public organization compliance with RTI - Bangladesh perspective</i></p> <p>CONTRIBUTED PAPERS:</p> <p>1. Sanasam</p>	<p>CHAIR: Subhangi Sharma Executive Director, Indian Public Library Movement, NASSCOM Foundation, India</p> <p>CO-CHAIR: Priya Rai Librarian, National Law University, India</p> <p>INVITED SPEAKER: Kristian Jensen <i>Living Knowledge: Meeting the British Library's Purpose in a Digital Age</i></p> <p>GUEST SPEAKER: Ramesh Gaur <i>Transformation Towards Smart Libraries</i></p> <p>CONTRIBUTED PAPERS:</p> <p>1. Patrick Vanden Berghe <i>The Delphi Project: Transforming Flemish Libraries to User-Oriented Points of Information</i></p> <p>2. B P Singh <i>Refocusing with Digital Information Services using Quick Response (QR) Code in Digital</i></p>	<p>CHAIR: Kavi Mahesh Professor & Dean of Research, Director, KAnOE - Centre for Knowledge Analytics and Ontological Engineering, PES University, India</p> <p>CO-CHAIR: Praveen Babbar Deputy Librarian, Jawaharlal Nehru University, India</p> <p>INVITED SPEAKER: Atsuyuki Morishima <i>The Hondigi/L-Crowd Joint Project: A Microtask-based Approach for Transcribing Japanese Texts</i></p> <p>GUEST SPEAKER: Kalyan Kumar Bhattacharjee <i>Collaborative Knowledge Creation and Crowd sourcing kalyan</i></p> <p>CONTRIBUTED PAPERS:</p> <p>1. Martin Kesselman <i>Collaborations of Scientists & Academic Librarians in the Digital Knowledge</i></p>

<p>P Sankar <i>Building Digital Repository of NSTMIS Research Publications: A Case Study</i></p>	<p>Sandhyarani Devi <i>Development of Digital Library and Users Perception: With Reference to Manipur University Library</i></p> <p>2. Sushant Kumar Panigrahi, Devendrappa T M, and Nihal Alam <i>Digital Authentication Systems and Remote Access to E-Resources: A Study</i></p>	<p><i>Libraries and Information Centres: A Trends to Changing Information Landscape</i></p> <p>3. Monika Verma <i>Future of Libraries in the Intelligent Web Era</i></p>	<p><i>Environment: Past, Present, and Promise</i></p> <p>2. Naushad Ali and Daud Khan <i>Behavioural Mechanism of Knowledge Sharing Pattern among Research Scholars</i></p> <p>3. Anand Kumar and B P Singh <i>Ontology-based Knowledge Construction for University Administration Processes</i></p> <p>4. Pralhad Jadhav <i>Personal Knowledge Management (PKM) Framework by Using Desktop Search Application – Google Desktop Search Tool</i></p>
<p>10.45 am–11.30 am PLENARY SESSION I <i>Venue: Stein Auditorium</i></p> <p>Chair: S B Ghosh Emeritus Professor, Indira Gandhi National Open University, India</p> <p>Keynote Speaker: Donna Scheeder President, International Federation of Library Associations and Institutions, USA</p>			
<p>11.30 am–1.00 pm SPECIAL EVENTS: SESSION 2</p>			
<p style="text-align: center;">SE 2A (Stein Auditorium)</p> <p>Content, Context and Technology: Monetizing your Content through New Means</p>		<p style="text-align: center;">SE 2B (Silver Oak)</p> <p>Massive Open Online Courses</p>	
<p>1.00 pm–2.00 pm Lunch</p>			
<p>2.00 pm–2.30 pm POSTER PRESENTATIONS & VISIT TO EXHIBITION</p> <p style="text-align: center;"><i>Venue: Silver Oak, Pre-function area (Poster Presentations); Charminar (Exhibition)</i></p>			
<p>2.00 pm– 4.00 pm SPECIAL EVENTS: SESSION 3</p>			

SE 3A (Stein Auditorium)		SE 3B (Silver Oak)	
2.00 pm– 3.00 pm Digital Preservation, Conservation and Curation		Innovation in Digital Publishing	
3.00 pm– 4.00 pm Digitization of Indigenous Knowledge			
4.00 pm–5.30 pm TECHNICAL SESSION 2			
Session 2A (Stein Auditorium)	Session 2B (Silver Oak)	Session 2C (Jacaranda I, First floor)	Session 2D (Jacaranda II, First floor)
<i>Panel Discussion on LIS Education at the Crossroads</i>	<i>Knowledge Management Models and Applications</i>	<i>Big Data and Data Visualization</i>	<i>Digital Library Case Studies and Best Practices</i>
<p>CHAIR: Gobinda Chowdhury Professor & Head, Information Science, Department of Mathematics & Information Sciences, Northumbria University, UK</p> <p>CO-CHAIR: Sangeeta Kaul, Network Manager, DELNET, India</p> <p>PANELISTS:</p> <ul style="list-style-type: none"> ● Shalini R Urs ● Paul Niewenhuysen ● Uma Kanjilal ● Dilara Begum 	<p>CHAIR: S Majumdar Librarian, India International Centre, India</p> <p>CO-CHAIR: Mayukh Roy Chowdhury KPMG, India</p> <p>INVITED SPEAKER: Kavi Mahesh <i>Knowledge Management Tool and Technologies</i></p> <p>GUEST SPEAKER: Kishore Ramdas Ingale <i>Big Data Applications in Libraries : Possibilities and Implications: Only topic said, no abstract received</i></p> <p>CONTRIBUTED PAPERS: 1. Somayya Madakam <i>Technological Publication Process System: Is this missing</i></p>	<p>CHAIR: Parveen Arora Adviser & Head, NSTMIS Division, Department of Science and Technology, Government of India</p> <p>CO-CHAIR: N K Wadhwa National Physical Laboratory, India</p> <p>INVITED SPEAKER: Matthias L Hemmje <i>Active Data Management Planning – Opportunities and Challenges</i></p> <p>GUEST SPEAKER: Usha Mujoo Munshi <i>Big Data Applications - Powering the Transition to Learning Commons from Printed Page to Digital Age</i></p> <p>CONTRIBUTED PAPERS: 1. Md. Nasiruddin <i>Digital School Libraries in Bangladesh: A Role</i></p>	<p>CHAIR: M Madhusoodhan Associate Professor, University of Delhi, India</p> <p>CO-CHAIR: Tariq Ashraf Deputy Librarian, University of Delhi, India</p> <p>INVITED SPEAKERS: Maria Gaeda <i>Multilingual Access to Digital Libraries - the European use case</i></p> <p>Nalini Mahajan <i>Role of Medical Librarians in Building Digital Communities</i></p> <p>CONTRIBUTED PAPERS: 1. M P Rajapaksha <i>Use of Web-based Library Services by Undergraduate Students: A Preliminary Case Study in the Faculty of Arts in</i></p>

	<p><i>knowledge in Researchers?</i></p> <p>2. Ashutosh G Joshi <i>Demystifying the Growth: A Case Study of Knowledge Resource Centre of Mahindra Research Valley</i></p> <p>3. G Rathinasabapathy <i>Krishikosh: Institutional Repository of National Agricultural Education And Research System (Nares) of India: An Analytical Study</i></p>	<p><i>Model for Changing Lives of the Extremely Poor Children</i></p> <p>2. Zeba Khanam <i>Big Data Management</i></p> <p>3. Geetanjali Bihani <i>Smart Cities: Envisioning through Big Data Analytics</i></p>	<p><i>University of Colombo</i></p> <p>2. Usman A Adam <i>Availability and Uses of Public Access Computers in Academic Libraries in Kaduna State</i></p> <p>3. Arati Desai <i>Nehru Centre Library: Infrastructure of the Future</i></p>
5.30 pm–6.30 pm	VISIT TO EXHIBITION <i>Venue: Charminar</i>		
6.30 pm–7.30 pm	CULTURAL PROGRAMME <i>Venue: Stein Auditorium</i>		
7.30 pm onwards	CONFERENCE DINNER <i>Venue: IHC Hub</i>		

Day 3: Thursday, 15 December 2016

9.00 am–10.45 am

TECHNICAL SESSION 3

<p align="center">Session 3A (Stein Auditorium)</p> <p><i>Digital Curation & Preservation of Indigenous Knowledge</i></p>	<p align="center">Session 3B (Silver Oak)</p> <p><i>Data Science</i></p>	<p align="center">Session 3C (Jacaranda I, First floor)</p> <p><i>Information Storage and Retrieval</i></p>	<p align="center">Session 3D (Jacaranda II, First floor)</p> <p><i>Semantic Web and Multimedia Content</i></p>
<p>CHAIR: Ramesh Gaur University Librarian, JNU, India</p> <p>CO-CHAIR: Md. Nasiruddin Professor, National University, Bangladesh</p> <p>INVITED SPEAKERS: Hadar Miller <i>From Meta Data to Data - Search and Discovery</i></p> <p>Tom Derrick <i>Unlocking India's Printed Heritage through Innovative Digital Research</i></p> <p>GUEST SPEAKER: Heather Brown <i>Interconnections: Developing an Integrated Framework for Disaster Plan to Safeguard Library Collections</i></p> <p>CONTRIBUTED PAPERS: 1. G Rathina Sabapathy <i>Sahitya Sagar: A Digital Repository of Sahitya Akademi Library</i></p>	<p>CHAIR: Usha Mujoo Munshi Librarian, Indian Institute of Public Administration, India</p> <p>CO-CHAIR: Ashutosh Mishra National Institute of Industrial Engineering, India</p> <p>INVITED SPEAKERS: Gobinda Chowdhury <i>From Information Science to Data Science: new challenges for education and research</i></p> <p>Jean Marc Comment <i>Open Data in Switzerland</i></p> <p>CONTRIBUTED PAPERS: 1. Pushpita Mishra <i>Application of Open Source Solutions for Digital Asset Management: a case study of NIT Rourkela</i></p> <p>2. Barnali Roy Choudhury <i>Developing Institutional Open Educational Resource Repository in Open & Distance</i></p>	<p>CHAIR: Alejandro Bia Associate Professor, Miguel Hernández University, Spain</p> <p>CO-CHAIR: Nabi Hasan University Librarian, Aligarh Muslim University, India</p> <p>INVITED SPEAKER: Paul Nieuwenhuysen <i>Information Discovery on the Internet, Using a Search Query that Consists of a Combination of Text and Image</i></p> <p>CONTRIBUTED PAPERS: 1. Abhishek P and Kavi Mahesh <i>Classification-based Access Control Methodology in RDF</i></p> <p>2. J Vivekavardhan <i>Emerging Trends in Search Engines: Engineering Faculty and Students' Perception on Search Engines</i></p> <p>3. Debarshi Das and Rajarshi Das <i>Reading MIND:</i></p>	<p>CHAIR: Tengu Mohd T Sembok Deputy Vice Chancellor, Faculty of Defence Science and Technology, National Defence University, Malaysia</p> <p>CO-CHAIR: Sangam Kumari Manager, Library Services, The Japan Foundation, India</p> <p>INVITED SPEAKERS: Ricardo da Silva Torres <i>Managing Large Multimedia Data Repositories: An E-Science Perspective</i></p> <p>John Akeroyd <i>Semantic Enhancement Improving Discovery and Discoverability in Bibliographic and Cultural Worlds</i></p> <p>CONTRIBUTED PAPERS: 1. Madhu Nadig <i>Empirical Analysis of Indian Political Ecosystem as an Application of Generic Textual Analysis</i></p> <p>2. Peerzada</p>

<p>2. Nadim Akhtar Khan <i>Digital Library of Traditional Kashmiri Music</i></p>	<p><i>Learning Environment: A Model for Netaji Subhas Open University based on Open Source Software</i></p> <p>3. P M Naushad Ali and Azra Aftab <i>Evaluation of Major Digital Libraries based on DigiQUAL Protocol</i></p>	<p><i>Analysing Sentiments in Texts with Software Toolkit</i></p>	<p>Mohammad Iqbal <i>The Difference of Significance in Precision, Recall and F-Measure of Select Search Engines</i></p>
<p>10.45 am–11.30 am Plenary Session II Venue: Stein Auditorium</p> <p>Chair: Dr Ajay Mathur Director General, TERI</p> <p>Keynote Speaker: Shrikant Sinha Chief Executive Officer, NASSCOM Foundation, India</p>			
<p>11.30 am–1.00 pm SPECIAL EVENTS: SESSION 4</p>			
<p>SE 4A (Stein Auditorium) Universal Access and Sharing of Research Publications and Data: A Strategy towards Open Knowledge</p>	<p>SE 4B (Silver Oak) Smart Ways to Publishing and Digital Marketing</p>		
<p>1.00 pm–2.00 pm Lunch</p>			
<p>2.00 pm–2.30 pm POSTER PRESENTATIONS Venue: Silver Oak, Pre-function area</p>			
<p>2.00 pm–4.00 pm SPECIAL EVENTS: SESSION 5</p>			
<p>SE 5A (Stein Auditorium) Digital Convergence at the Bottom of the Pyramid</p>	<p>SE 5B (Silver Oak) Academic Integrity in Digital World</p>		
<p>4.00 pm – 5.30pm TECHNICAL SESSION 4</p>			
<p>Session 4A (Stein Auditorium) <i>Open Archives Initiatives and Post Metadata Harvesting (OAI/PMH) - I</i></p>	<p>Session 4B (Silver Oak) <i>Open Innovation and New Communication Model</i></p>	<p>Session 4A (Jacaranda I, First floor) <i>DL Multi-linguality and Interoperability issues</i></p>	<p>Session 4D (Jacaranda II, First floor) <i>Social Media and Ubiquitous Computing</i></p>
<p>CHAIR: Gayas Makhdumi Former University Librarian, Jamia Millia Islamia, New Delhi, India</p> <p>CO-CHAIR: Neeti Saxena</p>	<p>CHAIR: Kala Dutta Director Library, American Center Library</p> <p>CO-CHAIR: Shiva Chidambaradm, Librarian, AIIMS</p>	<p>CHAIR: Shantanu Ganguly Fellow, Knowledge Management Division, TERI</p> <p>CO-CHAIR: Sanjeev Kumar Director, Learning</p>	<p>CHAIR: Alejandro Bia Associate Professor, Miguel Hernández University, Spain</p> <p>CO-CHAIR: Lata Suresh Head-Knowledge</p>

<p>Manager, British Council, India</p> <p>INVITED SPEAKER: Erik-Jan Van Kleef <i>Open Access : Facilitating the Flow of Knowledge</i></p> <p>CONTRIBUTED PAPERS: 1. Surinder Kumar <i>MetaFast: Web Based Metadata Builder for Large-scale Repositories</i></p> <p>2. Purbi Dey Kanungo <i>Interoperability Standards in Digital Libraries: With a Special Reference to OAI-PMH</i></p> <p>3. Vrushali Dandawate <i>Use of Open Access by Engineering Faculty: A Case Study of Aissms College of Engineering, Pune, Maharashtra, India</i></p>	<p>INVITED SPEAKER: Klaus Tochtermann <i>Digitization of Science and its Impact on Libraries</i></p> <p>CONTRIBUTED PAPERS: 1. Samrat Guha Roy, B Sutradhar and Partha Pratim Das <i>Large-scale Metadata Harvesting – Tools, Techniques and Challenges: NDL A Case Study</i></p> <p>2. Tazeem Zainab and Zahid A Wani <i>An Altmetric Approach to Assess the Research Productivity: Use of Research Gate (RG)</i></p>	<p>Resource Center, National Institute of Fashion Technology, India</p> <p>INVITED SPEAKERS: Tengu Mohd T Sembok <i>Linguistic Semantic Network for Document Representation</i></p> <p>Akira Maeda <i>Towards Integrated Multilingual Access to Libraries and Archives</i></p> <p>CONTRIBUTED PAPER: 1. Monika Singh <i>Use of Social Networking Sites By the Students and the Research Scholars of Indian Institute of Technology, Delhi (IIT) and Delhi Technological University, Delhi (DTU): A Study</i></p>	<p>Resource Centre - Indian Institute of Corporate Affairs, India</p> <p>INVITED SPEAKER: Adam Koszary <i>The Bodelian Libraries and Social Media: How we succeed with our strategy</i></p> <p>GUEST SPEAKER: Meeta W Sengupta <i>How Social Media has taken Our Lives</i></p> <p>CONTRIBUTED PAPER: 1. Sarwesh Pareek <i>Effectiveness of Social Media tools in Information Sharing and Collaborative Learning: a Case Study of B.V.B. Vidyashram Pratap Nagar</i></p>
<p>6.30 pm–7.30 pm</p>	<p>CULTURAL PROGRAMME <i>Venue: Stein Auditorium</i></p>		
<p>7.30 pm onwards</p>	<p>CONFERENCE DINNER <i>Venue: IHC Hub</i></p>		

Day 4: Friday, 16 December 2016

9.00 am–10.45 am

Technical Session 5

Session 5A (Stein Auditorium)	Session 5B (Silver Oak)	Session 5C (Jacaranda I, First floor)	Session 5D (Jacaranda II, First floor)
<i>Digital Rights Management and Research Integrity</i>	<i>E-Learning Platform and Open Educational Resources</i>	<i>Enterprise Architecture 2.0</i>	<i>Integration of Data Warehousing & Mining</i>
<p>CHAIR: P K Bhattacharya Fellow & Area Convenor, Knowledge Management Division, TERI, India</p> <p>CO-CHAIR: S S Dhaka Director, Ministry of External Affairs, Government of India</p> <p>INVITED SPEAKER: Michael Seadle <i>Research Integrity: Long-term digital archiving or knowledge management</i></p> <p>GUEST SPEAKERS: Somen Chakraborty <i>Emerging IPR laws in India: Threats or opportunities for Digital Right Movements</i></p> <p>Tariq Ashraf <i>Measuring, Maximizing and managing Research :The Emerging Matrixes</i></p>	<p>CHAIR: Gobinda Chowdhury Professor & Head, Information Science, Department of Mathematics & Information Sciences, Northumbria University, UK</p> <p>CO-CHAIR: Moorttimee Samantaray Deputy Librarian and Head, Library and Documentation Division, NCERT, India</p> <p>INVITED SPEAKER: Shahid Rasool <i>Online Education Initiatives - necessity, possibilities and challenges for India</i></p> <p>CONTRIBUTED PAPERS: 1. Paramita Sen <i>Use of E-resources by N-List in the College Libraries under West Bengal State University</i></p>	<p>CHAIR: C S Arora NABET/QCI Assessor & Visiting Professor; Former Senior Consultant, MHRD/NMEICT & Director (EDP), MHA/ORGI</p> <p>CO-CHAIR: R N Malviya Library Consultant, India</p> <p>INVITED SPEAKER: Alejandro Bia <i>A showcase of on-line tools from the TRACE project</i></p> <p>CONTRIBUTED PAPERS: 1. Kavita Chaddha <i>Libraries on Fingertips: A Case Study of Indian Institute of Management Lucknow-Noida Campus</i></p> <p>2. Prida Ariani <i>Drag The Attentiveness Of Young Voters about The Elections through Social Media In Jakarta, Indonesia</i></p>	<p>CHAIR: S Venkadesan Director, Learning and Resource Centre, Indian School of Business, Hyderabad, India</p> <p>CO-CHAIR: Rajiv Vij, Deputy Director, DESIDOC, India</p> <p>INVITED SPEAKER: Anna Janikova <i>Data Mining: A Tool for Better Service Delivery</i></p> <p>CONTRIBUTED PAPER: 1. Chiraag and Kavi Mahesh <i>Graphic Visualization of Scientometric Data</i></p>

	<p>2. Vanita Khanchandani <i>MOOCs: An Overwhelming Opportunity for Librarians</i></p> <p>3. Alka Rai <i>E-Learning: Government of India Initiatives: A Critical Review</i></p> <p>4. Vijendra Kumar <i>Online Courses on Digital Libraries: An Exploratory Study</i></p>	<p>3. Saleeq Ahmad Dar and Margam Madhusudhan <i>Use of Mobile Devices in Enhancing Information Services: Analysis of the Students' Opinion in the University of Delhi</i></p>	
<p>10.30am–11.30 am</p> <p style="text-align: center;">Plenary Session III <i>Role of Information in meeting SDGs</i></p> <p style="text-align: center;">CHAIR Donna Scheeder <i>President, International Federation of Library Associations and Institutions & Deputy Chief Information Officer, Congressional Research Service, Library of Congress, USA</i></p> <p style="text-align: center;">PANELISTS</p> <ul style="list-style-type: none"> ● Geeta Malhotra Country Director, READ India <i>Public Libraries Transformation</i> ● Amarjeet Kaur Former Director, National Library Board, Singapore <i>Corporate Information System</i> ● Yashvir Singh Economic Adviser, Ministry of Environment, Forest and Climate Change, Government of India <i>Government Information System</i> 			
<p>11.30 am–1.00 pm</p> <p style="text-align: center;">Special Events: Session 6</p>			

SE 6A (Stein Auditorium) Transformation in Public Libraries	SE 6B (Silver Oak) Application of Internet of Things (IoT) for Sustainable Development Goals (SDGs)
1.00 pm–2.00 pm	Lunch
2.00 pm–4.30 pm	Special Events: Session 7
SE 6A (Contd) (Stein Auditorium) Transformation in Public Libraries	SE 7B (Silver Oak) 2.00 pm–3.30 pm Digitization & Economic Development 3.30 pm–4.30 pm Capacity Building Initiatives in E-Governance
4.30 pm–5.30 pm	VALEDICTORY SESSION Venue: Stein Auditorium <i>Welcome Address</i> Shri Ashok Chawla Chairman, TERI <i>Special Address</i> Dr Ajay Mathur Director General, TERI <i>Special Address</i> Mr Prabir Sengupta Distinguished Fellow and Director, Knowledge Management Division, TERI, India <i>Announcement of Best Paper Award</i> Dr Michael Seadle Chair, Best Paper Award Committee, ICDL 2016 <i>Announcement of Best Poster Award</i> Dr Jean Marc Comment Chair, Best Poster Award Committee, ICDL 2016

ICDL 2016 Recommendations

Dr Gobinda Chowdhury

Chair, ICDL 2016 Recommendation Committee

Valedictory Address

Dr Ajay Kumar

Additional Secretary, Ministry of Communication and
Information Technology, Government of India

Vote of Thanks

Dr Shantanu Ganguly

Organizing Secretary, ICDL 2016

DETAILS OF WORKSHOP

Innovation and Knowledge Management

14 December 2016, Wednesday

Time: 10.00 am–5.30 pm

Venue: Juniper, India Habitat Centre

Event Associate Partner: SpadeWorx

10.00 am–10.30 am	<i>Lead Speaker's Address</i> Innovation Management: Balancing Creativity with Discipline Gautam Shroff Vice President & Chief Scientist, TCS Innovation Labs Delhi, India
10.30 am–11.00 pm	Knowledge Management for Millennials Mandar Bhagwat Co-founder, Director and CTO, SpadeWorx Software Services, India
11.00 am–11.30 am	<i>Networking over Tea</i>
11.30 am 1.00 pm	Technical Session 1
11.30 am–12.00 pm	Knowledge Management for Innovation Anirban Chatterjee Ernst and Young
12.00 pm–12.30 pm	Keynote Address Knowledge Management in an era of Digital Transformation Ganesh Natarajan Executive Chairman and Founder of 5F World, India
12:30 pm–1:00 pm	Strategy in the Innovation Economy Mohit Taneja Senior Director, Innovation Strategy, Fresenius Kabi Oncology Ltd
1.00 pm–2.00 pm	<i>Networking over Lunch</i>
2.00 pm–5.30 pm	Technical Session 2
2.00 pm–3.00 pm	Session Chair: Jitendra Wase, Co-Founder and Director, SpadeWorx Theme – Business Success through Knowledge Augmentation The MAKE or BREAK – What makes your Business, Business Worthy? Tania Chatterjee Head of Learning Delivery – Vice President, Learning & Development, Royal Bank of Scotland, India Ritu Chiradeep Super Coach for LSC Asia Pacific, Shell Oil, India
3.00 pm–3.30 pm	<i>Networking over Tea</i>
3.30 pm– 4.45 pm	Ontology based Knowledge Management Kavi Mahesh Professor and Dean of Research, Director, KAnOE
4.45 pm–5.30 pm	Collaborative Knowledge Sharing and Crowdsourcing Athar Ali Manager (Learning and Development), KPMG, India
5. 30 pm onwards	Summing up

Big Data and Analytics

15 December 2016, Thursday

Time: 10.30 am – 5.30 pm

Venue: Juniper, India Habitat Centre

Event Partner: Department of Biotechnology, Government of India

10.00 am–10.30 am	Keynote Address Big Data - Creating a Culture of Actionable Insight Rajesh Shewani Head, Technology and Solution Architecture, Teradata India
10.30 am–11.00 am	Making Data Interactive via Artificial Intelligence Raghav Agarwal Co-founder, The Fluid AI
11.00 am–11.30 am	<i>Networking over Tea</i>
11.30 am–1.00 pm	Technical Session 1 BIG DATA AND ANALYTICS Chair: Gulshan Wadhwa, Joint Director, Department of Biotechnology, Government of India
11.30 am–12.00 pm	Big Data and Business Intelligence Dr G Ganesh Das <i>Head of Corporate Strategy & Business Collaboration including Digital & Business Intelligence, Tata Power Delhi Distribution Limited</i>
12.00 pm–1.00 pm	Big Data Interventions in Industries – From Idea to Performance Subrata Das Industry Director, Public Services, SAP India Pvt. Ltd
1.00 pm–2.00 pm	<i>Networking Lunch</i>
2.00 pm–5.30 pm	Technical Session 2 BIG DATA BIOTECHNOLOGY AND BIOINFORMATICS: CHALLENGES AND OPPORTUNITIES FOR INDIA
2.00 pm–2.30 pm	Opening Keynote Role of Big Data in Current Bioinformatics Research T Madhan Mohan Adviser, Department of Biotechnology, Government of India
2.30 pm–3.00 pm	Big Data Analytics in Bioinformatics: A Machine Learning Perspective Dhruba K Bhattacharyya Professor, Computer Science and Engineering, Tezpur University, Assam, India
3.00 pm – 3.30 pm	<i>Networking over Tea</i>
3.30 pm – 5.30 pm	Panel Discussion Chair T Madhan Mohan Adviser, Department of Biotechnology, Government of India Panelists

Big data analysis in biotechnology: applications of machine learning and challenges towards clinical applications

Dinesh Gupta

Group Leader, International Centre for Genetic Engineering and Biotechnology, New Delhi, India

Big Data and Cloud Computing in Agri-bioinformatics

A K Mishra

Senior Scientist, Indian Agricultural Research Institute, New Delhi, India

Novel tools and big data bioinformatics enabling precision genome engineering

D Sundar

DuPont Young Professor, Associate Professor, Department of Biochemical Engineering and Biotechnology, Indian Institute of Technology Delhi, India

5.30 pm onwards

Summing up

Social Media and Analytics

16 December 2016, Friday

Time: 10.00 am–5.30 pm

Venue: Juniper, India Habitat Centre

10.00 am – 10.30 am	<i>Setting the Theme</i> Dr Shantanu Ganguly , Fellow, Knowledge Management Division, TERI
10.30 am – 11.00 am	<i>Practice of Social Media Analytics</i> Sameep Mehta STSM & Manager, Knowledge Engineering and Encrypted Analytics, IBM Research India
11.00 am – 11.30 am	<i>Networking over Tea</i>
11.30 am – 1.00 pm	Technical Session 1 Chair: Jitendra Wase , Co-Founder and Director, SpadeWorx, India
11.30 am – 12.00 pm	<i>Impact and Influence in Social Media</i> Meeta Sengupta Social Media Evangelist and Independent Consultant
12.00 pm – 12.30 pm	<i>Analytics for Learning Content Management</i> Danish Contractor IBM Research, India
12.30 pm – 1.00 pm	Vivek Singh Solution Architect Pre-Sales, Teradata, India
1.00 pm – 2.00 pm	<i>Networking over Lunch</i>
2.00 pm – 4.45 pm	Technical Session 2 Chair: M Madhavan , Senior Editor and technology columnist, India
2.00 pm – 3.00 pm	<i>How to develop a successful CRM strategy and its implementation and utilization in an organization?</i> Sheshadri Chatterjee Asia Pacific Business Programme Manager, Microsoft Corporation, India
3.00 pm – 3.30 pm	<i>Networking over Tea</i>
3.15 pm – 3.45 pm	<i>Digital Marketing Trends to look forward to in 2017</i> Prateek Shah Founder, Digital Defynd, India
3.45 pm – 4.30 pm	<i>Social Media Analytics and KPMG's KM Philosophies</i> Vinkal Chadha Associate Director, KPMG
4.30 pm onwards	<i>Summing up</i>

DETAILS OF SPECIAL EVENTS

Special Event: SE 1

National Digital Library of India

13 December 2016, Tuesday

Time: 4.00 pm – 5.30 pm

Venue: Stein Auditorium, India Habitat Centre

**MHRD**Government of India
Ministry of Human Resource
Development**NMEICT**
National Mission on Education Thr<https://ndl.iitkgp.ac.in>

The Ministry of Human Resource Development, Government of India, under National Mission on Education through Information and Communication Technology has initiated the National Digital Library of India (NDL) project to develop a framework of a 24x7 facility, hosting a huge virtual repository of knowledge with a single-window search facility which can bridge the gaps that exist in the wide range from literacy to advanced knowledge discovery and development of knowledge. It is hosted and spearheaded by IIT Kharagpur.

The vision is to build National Digital Library (NDL) of India as a ubiquitous national knowledge asset of India that should become the key driving force for education, research, innovation, and technology economy in the country. Inclusiveness and openness are the main mottos of NDL. So, the coverage is going to be diverse to include various economic, technical, strategic, and social sectors. NDL is for the entire population and caters to any area of interest. It will serve school kids, college students, teachers, education administrators, researchers, competitive examination aspirants, professionals/practitioners of all domains such as medical, technical, legal, finance, etc. NDL will facilitate students to prepare for entrance and competitive examinations and enable learners to learn from best practices from all over the world and adopt them.

In its final contour, NDL will serve as a pan-India virtual teaching-learning-evaluation-knowledge discovery and innovation platform which will help personalized, self-paced, new-age multimedia education at all levels, act as a platform that can bring fundamental shift in the paradigm of education and research and thus, become a true national asset. The full-scale NDL will bring in a revolution in the library services by ushering in a new education movement in the country covering all stages from kindergarten to cutting edge research to life-long learners.

The true advantages of the digital technology will thus be imbibed in the revolution to help Digital India leapfrog to the position of a world leader in education. NDL will serve as the pivotal core for learning to alleviate the challenges of geographic expanse, lack of teachers and infrastructure and huge volume of students. NDL will also open several opportunities for new-age techniques in learning, solve many of the long-standing bottlenecks in education and research and facilitate systematic global-level crowdsourcing in education. ***NDL will function not just as a library but as a universal education platform and thus, showcase digital libraries as education service providers for the global learner community.***

<https://web.facebook.com/NDLIndia/>

Agenda

CHAIR: *Jagdish Arora*, Director, Information and Library Network (INFLIBNET) Centre, India
CO-CHAIR: **Nanda Gopal Chattopadhyay**, CTO, National Digital Library Project, Indian Institute of Technology (IIT) Kharagpur, India

4.00 pm–4.05 pm *Opening Remarks by Chair*

4.05 pm–4.30 pm

Overview of NDL

Partha Pratim Das

Joint Principal Investigator, National Digital Library Project
IIT Kharagpur, India

4.30 pm–4.45 pm

Address

Al-Amin Yusuph

Advisor for Communication and Information, UNESCO New Delhi Cluster
Office for Bangladesh, Bhutan, India, Maldives, Nepal & Sri Lanka

4.45 pm–5.30 pm

Panelists

John Akeroyd

Senior Consultant, CIBER Research, Honorary Research Fellow, UK

Maria Gaede

Lecturer, Berlin School of Library and Information Science,
Humboldt-Universität zu Berlin

Kristian Jensen

Head of Collections & Curation, British Library, UK

Uma Kanjilal

Professor, Library and Information Science, Indira Gandhi National Open
University (IGNOU), New Delhi, India

Ramesh Gaur

University Librarian, Jawaharlal Nehru University, India

Partha Pratim Das

Joint Principal Investigator, National Digital Library Project
IIT Kharagpur, India

5.30 pm

Closing remarks

Nanda Gopal Chattopadhyay, IIT Kharagpur

Special Event: SE 2A

Content, Context and Technology: Monetizing your Content through New Means

14 December 2016, Wednesday

Time: 11.30 am–1.00 pm

Venue: Stein Auditorium, India Habitat Centre



Technology has fundamentally changed how and where consumers access content, fragmenting audiences and revenue streams. When it comes to the digital landscape, innovation is the new norm. The digital marketing platforms have reinvented themselves to adapt to the pervasiveness of the Internet and the possibilities it offers for easier and faster delivery of content. Media leaders are seeking ways to transform their engaged, loyal audiences into long-term sources of revenue.

The key to monetize their content is to experiment with different models and constantly evolve. The underlying technology architecture needs to be flexible as well as extensible, so that the stakeholders do not need to invest in new technologies each time they need to experiment a new content offering. Only those with the right architecture and technology solutions will be successful as both audiences and business models will change over time.

This Special Event provided a platform for exploring opportunities in content monetization for publishers, entrepreneurs, and other stakeholders. The panel will discuss on issues related to the tools and technology architecture that stakeholder need to implement for successful content monetization models.

Agenda

CHAIR: N K Mehra, President, Federation of Indian Publishers, India

CO-CHAIR: Praveen K Choudhary, Assistant General Manager-Documentation, DLF, India

11.30 am–11.40 am

Opening Remarks by Chair

11.40 am–12.10 pm

Lead Speaker

Brandon A Nordin

Senior Vice President, Sales, Marketing & Digital Strategy, ACS Publications, USA

12.10 pm–12.50 pm

Panelists

Dhruv Nath

Chair, Entrepreneurship and Incubation Center, Management Development Institute, India

Kailash Balani

Managing Director, Balani Infotech Pvt. Ltd and iGroup Infotech India Pvt. Ltd, India

Garima Babbar

Head of Strategic Alliances–Education and Skill Development, South Asia, Adobe Systems, India

Susmita Chakraborty

Assistant Professor, University of Calcutta, India

12.50 pm–1.00 pm

Open Discussion

1.00 pm

Closing remarks by Chair/Co-Chair

Special Event: SE 2B

Massive Open Online Courses (MOOCs)

14 December 2016, Wednesday

Time: 11.30 am–1.00 pm

Venue: Silver Oak, India Habitat Centre

PowerCreator

Shortening the distance in education, Massive Open Online Courses (MOOCs) has emerged as a concept that offers free web-based distance learning programme. MOOC is an emerging topic and is at a very nascent stage with a view of having open access to digital education. Several organizations in India are working towards developing suitable course contents for MOOCs and the education system is likely to adopt MOOCs in near future.

One of the great initiatives in this direction is SWAYAM, which is an MOOCs platform by the Indian government with ambitious goals. It is the one platform that would bind Indian higher education, both online and offline. SWAYAM is having over 2000 courses, 250,000 hours of content, and over \$30 million paid to instructors. Students across all universities in India will be able to earn credits on SWAYAM.

This Special Event on MOOCs gave a platform to participants to learn and gain more knowledge about this concept. This event will explore how MOOCs will revolutionize India's education system.

Agenda

CHAIR: Dinesh K Gupta, Professor of Library and Information Science and Director (Research), Vardhman Mahaveer Open University, Kota, India

CO-CHAIR: Dilara Begum, Associate Professor & Chairperson, Department of Information Studies & Librarian (Acting), East West University, Bangladesh

11.00 am–11.05 am

Opening Remarks by Chair

11.05 am–11.55 pm

Lead Speaker

Frank Meng

Director, International Department, PowerCreator Info & Tech Co. Ltd, China

Uma Kanjilal

Professor, Department of Library Science, IGNOU, India

11.55 am–12.05 pm

Setting the Theme

Barnali Roy Chowdhury

Assistant Professor, School of Professional Studies, Netaji Subhas Open University, India

12.05 pm - 12.45 pm

Panelists

Anupam Basu

Professor, Department of Computer Science Engineering, Indian Institute of Technology Kharagpur, India

Andrew Thangaraj

Professor, Department of Electrical Engineering, Indian Institute of Technology Madras, India

Deepak B Phatak

Professor, Department of Computer Science and Engineering, Indian Institute of Technology Bombay, India

K Srinivas

Professor, ICT, National University of Education Training & Public Administration, New Delhi, India

12.45 pm–1.00 pm

Open discussion

1.00 pm

Closing remarks by Chair/Co-Chair

Special Event: SE 3A

Digitization of Indigenous Knowledge

14 December 2016, Wednesday

Time: 3.00 pm – 4.00 pm

Venue: Stein Auditorium, India Habitat Centre

An increasing number of cultural heritage institutions across the globe are exploring digitization as a means of preservation and/or improving access and knowledge of their collections. Digitization of indigenous knowledge has become increasingly necessary to prevent erosion of authentic traditional heritage. Digitization is a relatively new science which can support integration of the traditional and modern systems of knowledge creation and application. Ultimately, indigenous knowledge is collectively managed through oral traditions, encompassing various forms of knowledge about different aspects of the society. With digitization, oral traditions and other forms of indigenous knowledge can be preserved and applied to meet the needs of contemporary societies.

The Special Event examined digitization of indigenous knowledge as a critical resource for the promotion of culture, environmental sustainability and effective management of natural resources.

Agenda

CHAIR: Dr Sachchidanand Joshi, Member Secretary, Indira Gandhi National Center for the Arts, India
CO-CHAIR: Prof. Pravakar Rath, Dean, School of Economics, Management and Information Science, Mizoram University, Aizawl

3.00 pm – 3.10 pm

Opening Remarks by Chair

3.10 pm – 3.45 pm

Hadar Miller

Chief Information Officer, National Library of Israel, Jerusalem, Israel

P R Goswami

Director, Kalanidhi Division, Indira Gandhi National Centre for the Arts, India

Kristian Jensen

Head of Collections & Curation, British Library, UK

Jean Marc Comment

Head of the Unit, Swiss Federal Archives AF, Berne, Switzerland

Klaus Alexander Pendl

First Counsellor-ICT, Trade and Economic Affairs, Delegation of the European Commission to India

3.45 pm – 4.00 pm

Open Discussion

4.00 pm

Closing remarks by Chair

Special Event: SE 3B

Innovation in Digital Publishing

14 14 December 2016, Wednesday

Time: 2.00 pm–4.00 pm

Venue: Silver Oak, India Habitat Centre



India is emerging as a leading country to revolutionize the ‘digital economy’ through its ‘digital’ publishing. As of now, as digital media is fully integrated into our daily publishing lives and the industry continues to expand the format of books and data analytics, the Indian market continues to lead. The event highlighted the current state of the market, forecast how digital publishing will change in India and around the world in the next few years, and hear from some of the key players leading these innovative changes.

This Special Event is a movement beyond publishing, production, and dissemination and taking a look at everything from audience development and content strategies, to monetization of media, native advertising, digital regeneration, and more.

Agenda

CHAIR: Prasanto K Roy, VP & Head, NASSCOM Internet, Mobile & E-com. Council, India
CO-CHAIR: Sudheer K Arora, Consultant, Campus of Open Learning, University of Delhi, India

2.00 pm–2.10 pm *Welcome Remarks by Chair*

2.10 pm– 3.00 pm *Lead Speaker’s Address*
Conventional Print to Digital Multimedia
Anastasia Matskovich,
Director, Begell House, Inc., USA

3.00 pm–3.30 pm *Panelists*
Ricardo Torres
Associate Professor, Institute of Computing, University of Campinas
(UNICAMP), Brazil

Mrinalini Sardar
User Experience Designer, Adobe India

Mr Javed Ali
Adobe India

3.30 pm–3.45 pm *Open Discussion*

3.45 pm *Closing Remarks by Chair/Co-Chair*

Special Event: SE 4A

Universal Access & Sharing of Research Publications & Data: A Strategy towards Open Knowledge

15 December 2016, Thursday

Time: 11.30 am–1.00 pm

Venue: Stein Auditorium, India Habitat Centre

Majority of the research go un-noticed as they are mostly in priced domain. Universal open access to information and knowledge is vital for large scale sharing of research publications and outputs in the form of papers, data sets etc. Open access is a powerful mechanism for creating and validating research knowledge, and for supporting the development of research as a public good, rather than as an activity conducted behind closed doors. There is a growing consensus that open access is the way forward for long term sustainable access, and to enable the use and reuse of published research. Open access to research data is critical to engage and invest in research in order to accelerate the pace of scientific discovery and innovation, enrich knowledge base and education, and stimulate the economy through improvement in the public good.

Whatever the extent and nature of research publications and data, it is paramount to ensure that knowledge is readily accessible to all. Open knowledge is, therefore, a major contributor to the development of human capital and creativity in knowledge societies. Building openness into policies and technologies will result in greater opportunities for communities to transform into equitable and sustainable knowledge societies.

The rise of open data has introduced a new set of challenges for stakeholders committed to increasing the effectiveness and equitability of development through research production and communication. The panel dealt in issues pertaining to value attached to open access and various access options including Creative Commons Licencing available to popularize research, information sharing and collaboration by peers and networks.

Agenda

CHAIR: Klaus Tochtermann, Director of the ZBW-Leibniz Information Centre for Economics and Professor for Media Informatics at Kiel University, Germany

CO-CHAIR: Anup Das, Documentation Officer, Jawaharlal Nehru University, India

11.30 am–11.40 am *Welcome Remarks by Chair*

12.10 pm–12.50 pm

Panelists

Erik-Jan Van Kleef

Vice-President of Sales & Channel Management, 1Science, Belgium

Suneet Tuli

Dean, School of Engineering and Applied Sciences, Bennett University, Greater Noida, India; Ex-Dean, Research & Development, IIT Delhi

Prabir G Dastidar

Scientist/Director, Ministry of Earth Sciences, Government of India

Nidhi Srivastava

Fellow, Centre for Resource & Environment Governance, TERI

12.50 pm–1.00 pm

Open Discussion

1.00 pm

Closing Remarks by Chair/Co-Chair

Special Event: SE 4B

Smart Ways to Publishing and Digital Marketing

15 December 2016, Thursday

Time: 11.30 am -1.00 pm

Venue: Silver Oak, India Habitat Centre



ELSEVIER

According to *Digital Trends Report 2015* prepared by Adobe, over 43% of the companies consider digital marketing, including social media marketing as an integral part of organizations' marketing strategy. It is the increasingly digital nature of the world that has been the catalyst for propelling marketing into an even more elevated role within the organization, and it is unusual now for digital marketing to be treated in silo. In the strategic digital marketing domain, marketing content preparation remains the core issue - the size of words indicating the frequency of mentions, anticipating possible search by customers using key areas in which organizations plan to experiment most heavily in the coming years are likely to take centre stage. Social, mobile, content, and personalization were the commonly used avenues in digital marketing. These avenues, supplemented by data analytics, have become a powerful tool for making high value investments and also facilitate the decision-making process in marketing.

This Special Event highlighted digital marketing from different perspectives which will include academic scenarios, corporate scenarios, including innovative approaches to customer engagements using web, and social media platforms.

Agenda

CHAIR: L Subramanyan, Director, Trivone Media Network, India

11.30 am–11.40am

Welcome Remarks by Chair

11.40 am–12.00 pm

Lead Speaker

Heather Devereaux

Senior Director of Customer Engagement - Marketing, R&D Solutions,
Elsevier, The Netherlands

12.00 pm–12.40 pm

Panelists

Pradeep Chopra

CEO, Digital Vidya, New Delhi, India

Adam Koszary

Project Officer, The Museum of English Rural Life & Communications and
Social Media Officer, Bodleian Libraries, UK

Sheshadri Chatterjee

Asia Pacific Business Programme Manager, Microsoft Corporation, India

Dinesh K Gupta

Professor of Library and Information Science and Director (Research),
Vardhaman Mahaveer Open University, Kota, India

12.40 pm–1.00 pm	<i>Open Discussion</i>
1.00 pm	<i>Closing Remarks by Chair/Co-Chair</i>

Special Event: SE 5A

Digital Convergence at Bottom of the Pyramid

15 December 2016, Thursday

Time: 2.00 pm – 4.00 pm

Venue: Stein Auditorium, India Habitat Centre

Information and Communication Technologies (ICT) have opened up uncommon opportunities in urban and rural areas for improving the quality of both the natural environment and human well-being. ICTs, if properly designed, will be most meaningful to urban and rural families, to reach “the unreached” in terms of knowledge and skill empowerment and help to convert the vast scientific know-how, now available, into field level do-how. At present, this access is very limited in rural areas because of some hurdles, however, with increase in start-up based digital revolution and some government and NGOs initiatives, the situation is improving. This session will highlight some of the cases and also raises pertinent issues.

Agenda

CHAIR: Gaurav Dwivedi, CEO, MyGov Cell, Ministry of Electronic and Information Technology, Government of India

CO-CHAIR: R K Sharma, UN Information Center, India

2.00 pm–2.10 pm *Opening Remarks by Chair*

2.10 pm - 3.25 pm *Panelists*

Sachin Railhan
Head, Civil Society Empowerment Program, Digital Empowerment Foundation, India

Alekhya Dutta
Associate Fellow, Energy Environment Technology Development, TERI, India

Touseef Khan
Cofounder & CEO at Gramophone.co.in

Krishna Kumar
CEO, CropIn, India

3.25 pm - 3.45 pm *Open Discussion*

3.45 pm *Closing Remarks by Chair/Co-Chair*

Special Event: SE 5B

Academic Integrity in Digital World

15 December 2016, Thursday

Time: 2.00 pm–4.00 pm

Venue: Silver Oak, India Habitat Centre



Academic Integrity is defined as "a commitment, even in the face of adversity, to five fundamental values: honesty, trust, fairness, respect, and responsibility ... that enable research and academic communities to translate ideals to action."

The everyday use of new media technology has inevitably resulted in a shift in students' learning and literacy practices. When tracked in the classroom, these new literacies have consequences for scholarly practice, which leads to conflicts with our expectations on academic integrity.

When it comes to academic work, the Internet is a real double-edged sword as it provides endless sources of information and opportunities for research and learning. At the same time, it provides great potential to copy and misrepresent the information without properly crediting the sources. Given the easy access to the proliferation of sources and information online, are today's academia, industry and students more prone to plagiarize? This Special Event highlights relevant issues in academic integrity and the available tools and methods to reduce plagiarism.

Agenda

CHAIR: Michael Seadle, Professor, Humboldt University of Berlin, Germany

CO-CHAIR: Partha Bhattacharya, Joint Director, Directorate of Innovation and Technology Transfer, Amity University, India

2.00 pm–2.10 pm

Opening Remarks by Chair

2.10 pm–3.00 pm

Lead Speaker's Address

Value of academic integrity

Zeenath Reza Khan

Instructor in the Faculty of Engineering and Information Sciences,
University of Woollongong, Dubai

3.00 pm–3.30 pm

Panelists

Ramesh Gaur

University Librarian, Jawaharlal Nehru University, India

Savithri Singh

Principal, Acharya Narendra Dev College (University of Delhi), Creative Commons, India

Sandeep Chatterjee

Registrar, Indian Institute of Technology Delhi, India

Neel Mason

Managing Partner, Mason & Associates, India

3.30 pm–3.50 pm

Open Discussion

3.50 pm

Closing Remarks by Chair/Co-Chair

Special Event: SE 6A

Transforming Public Libraries

16 December 2016, Friday

Time: 11.30 am–4.30 pm

Venue: Stein Auditorium, India Habitat Centre



Hosted by: **NASSCOM**
FOUNDATION

In India, public libraries have played an important role in democratizing access to information. But over the years, Indian public libraries have not gone beyond the traditional business of reading and lending books. Times have changed and so have the needs, but public libraries have not been able to meet the changing needs of the citizens or to leverage the benefits of digital technology that is in the process of revolutionising access to information and knowledge.

The Indian Public Library Movement (IPLM) is a movement to re-establish the importance that Public Libraries deserve in the present context: a repository and source of information and ideas, a place for learning and enquiry, and for the generation of thought and the creation of new knowledge. IPLM has been conceived to re-vitalise public libraries as inclusive knowledge and information centres catering to the 21st century information needs of communities.

IPLM looks forward to work with all stakeholders to transform and re-invent our public libraries.

Agenda

11.30 am–11.40 am	Welcome and introduction Shubhangi Sharma Executive Director IPLM Secretariat, NASSCOM Foundation, India
11.40 am–11.45 am	Special Address Mr Shrikant Sinha CEO, NASSCOM Foundation, India
11.45 am–11.55 am	Setting the Context and giving an Overview of the Public Libraries in India B Shadrach Independent Consultant, Bill & Melinda Gates Foundation; Asia Coordinator, Alliance for Affordable Internet
11.55 am–12.15 pm	Changing Trends in the Public Library Space- Global Scenario Donna Scheeder President, International Federation of Library Associations
12.15 pm–1.00 pm	Panel Discussion 1 PUBLIC LIBRARY: A PLATFORM FOR KNOWLEDGE AND INTEGRATED SOLUTIONS FOR DEVELOPMENT Moderator Usha Mujoo Munshi Librarian, Indian Institute of Public Administration, India Panelists Surinder Kumar Senior Technical Director, Digital Archiving and Management Group, National Informatics Centre, India Children's Corner in Public Libraries Himanshu Giri

COO, Pratham Books, India

Skills and Livelihood

Liby Johnson

Technical Specialist Skills and Livelihood, United Nation Development Program

Reproductive, Maternal, Newborn, Child and Adolescent Health

Naina Rani

World Health Organization

1.00 pm– 2.00 pm

Lunch

2.00 pm–3.30 pm

Panel Discussion 2

ROLE OF LIBRARIANS BEYOND LIBRARIES: WAY FORWARD

Moderator

Santosh Abraham

Vice President, NASSCOM Foundation, India

Public librarians from partner states

Neeza Singh (INELI Innovator, Chandigarh); **Mr Rais Ahmed; Shobana** (INELI Innovator, Kerala); **Mudassir Ashraf** (Librarian, Distrivt Library, Anatnag)

Library Expert

Kalpana Dasgupta

Advisory Board Member at READ Global, Former Director, Central Secretariat Library, Government of India

Library Academics

Jagtar Singh

Professor and Head, Department of Library and Information Science, Punjabi University, Patiala, India

3.30 pm–4.00 pm

Outcome and Vote of Thanks

P Jayarajan

Library Advisor and Chairman, Indian Public Library Advisory Board, Thunchath Ezhuthachan Malayalam University; Former Head, British Council Libraries, India

Special Event: SE 6B

Application of Internet of Things (IoT) for Sustainable Development Goals (SDGs)

16 December 2016, Friday

Time: 11.30 am–1.00 pm

Venue: Silver Oak, India Habitat Centre



The Internet of Things (IoT) is upon us! Connected products are everywhere, and a number of companies are bringing the IoT into our lives, homes, offices, and industries. Numerous IoT research and application projects have been done by government, corporates, and universities or in joint public-private or industry-university collaboration in recent years.

This Special Event will highlight digitization and IoT applications in everyday life with the energy, oil, and gas areas in particular. The session is equipped to brush up IoT ideas and applications in real term and aims at enabling participants to gain knowledge through different cases and help us to further explore the use of technologies and principles at the core of the Web in order to innovate methods for seamless integration of physical devices.

Agenda

CHAIR: Neena Pahuja, Director-General, ERNET India

11:30 am–11:40 am

Welcome Remarks by Chair

11:40 am–12.10 pm

Lead Speakers

Satyajit Das

Programme Manager, Oil and Natural Gas Corporation, New Delhi, India

Shivkumar Kalyanaraman

Research Director, IBM Research, India

12.10 pm–12.45 pm

Panelists

Arijit Mukherjee

Senior Scientist, Embedded Systems & Robotics Research, Tata Consultancy Services, India

Sudakshina Ghosh

Director, Automotive Industry, SAP India

12.45 pm–1.00 pm

Open Discussion

1.00 pm

Closing Remarks by Chair

Special Event: SE 7Bi

Digitization & Economic Development

16 December 2016, Friday

Time: 2.00 pm–3.30 pm

Venue: Silver Oak, India Habitat Centre

With extensive digitization in place at the international level, the economic growth of a nation is primarily linked to the extent of adoption of information and communication technology for global good and finding the value of such adoption in terms of economic development in the country. Corporates and policy makers are increasingly facing complex challenges in today's transformed environment and in the process, have started using ICT tools in decision-making process powered by Internet of Things and Big Data analytics. The amount of data generated globally is expanding exponentially in various formats. In every country, leaders of government and businesses are investing heavily on digitization and utilizing value-added data for decision making through policies and strategies for ICT, internet access, communications media, and digital applications. In essence, ICT tools are used extensively to promote and structure the digitization of production and implementation processes for economic development.

Countries have achieved advanced levels of digitization, defined as the mass adoption of connected digital technologies and ICT applications by consumers, industries, and governments. The stakeholders have realized significant economic, social, and political benefits. For them, digitization is a pathway to economic growth and development and other countries are unduly falling behind.

Agenda

CHAIR: Prabir Sengupta, Distinguished Fellow and Director, Knowledge Management Division, TERI, India

2.00 pm–2:10 pm *Opening Remarks by Chair*

2.10 pm–3.00 pm

Panelists

Rajat Kathuria

Director, ICRIER, India

Kiran Karnik

Chair, Oxfam India; Chairman, Indraprastha Institute of Information Technology; President, India Habitat Centre, India

Biswajit Dhar

Professor, Jawaharlal Nehru University, India

3.00 pm–3.30 pm

Open Discussion

3.30 pm

Closing Remarks by Chair

Special Event: SE 7Bii

Capacity Building Initiatives in E-Governance

16 December 2016, Friday

Time: 3.30 pm–4.30 pm

Venue: Silver Oak, India Habitat Centre

Digital India, a flagship programme of the Government of India, aims to transform India into a digitally empowered society and knowledge economy-information technology in the three key vision areas of “Infrastructure as a Utility to Every Citizen”, “Governance and Services on Demand”, and “Digital Empowerment of Citizens”. This Special Event will aim at generating awareness of recent Indian government initiatives to build overall capabilities in the Indian context to support the Digital India initiatives.

The event will explore a wide range of solutions and produce an actionable report for policy makers of the nation. This Special Event will broadly inculcate following issues, among others:

- The roadmap to nurturing digital innovation in India
- Discuss issues relating to “Make in India” for the country’s growth
- How can India best harness the power of Cloud to deliver jobs and growth?
- What is the role of mobile technologies in bridging digital divide?

Agenda

CHAIR: Ashwini Kumar Sharma, Director General, National Institute of Electronics & Information Technology, India

3.30 pm–3.40 pm *Welcome remarks by Chair*

3.40 pm–4.15 pm

Panelists

Lovneesh Chanana

Vice President, Government Relations, SAP India

Charu Malhotra

Professor, Indian Institute of Public Administration, India

Piyush Gupta

Associate Vice President, National Institute for Smart Government

4.15 pm–4.30 pm

Open Discussion

4.30 pm

Closing Remarks by Chair

DETAILS OF SPEAKERS, CHAIRS AND CO-CHAIRS

1.	A K Mishra, Head & Sr. Scientist (Bioinformatics), Agricultural Knowledge Management Unit, Indian Agricultural Research Institute, India
2.	Adam Koszary, Communications and Social Media Officer, Bodleian Libraries, UK
3.	Ajay Kumar, Additional Secretary, Ministry of Electronics & Information Technology (MEITY), India
4.	Akira Meada, Professor, Department of Media Technology, College of Information Science and Engineering, Ritsumeikan University, Japan
5.	Al-Amin Yusuph, Adviser for Communication and Information for South Asia, UNESCO, India
6.	Alejandro Bia, Associate Professor, Miguel Hernández University, Spain
7.	Alekhya Dutta, The Energy and Resources Institute, India
8.	Amarjeet Kaur, Former Director, Library Development & Planning (Public Libraries), India
9.	Anastasia Matskovich, Director, Begell House Inc., US
10.	Andrew Thangaraj, Professor, Electrical Engineering, IIT Madras, India
11.	Anirban Chatterjee, Power & Utilities, Knowledge Manager, EY Knowledge, Global Delivery Services, India
12.	Arijit Mukherjee, Senior Scientist, Embedded Systems & Robotics Research, Tata Consultancy Services, India
13.	Ashraf Mudassira, Librarian, District Library Anantnag, India
14.	Athar Ali, Manager, KPMG Global Services, India
15.	Atsuyuki Morishima, Professor, Research Center for Knowledge Communities Graduate School of Library, Information, and Media Studies, University of Tsukuba, Japan
16.	B Shadrach, Independent Consultant, Bill & Melinda Gates Foundation; Asia Coordinator, Alliance for Affordable Internet, India
17.	Bablu Sutradhar, Librarian, Indian Institute of Technology, Kharagpur, India
18.	Barnali Roy Chowdhury, Assistant Professor, School of Professional Studies, Netaji Subhas

	Open University, India
19.	Biswajit Dhar, Professor, Centre for Economic Studies and Planning School of Social Sciences, Jawaharlal Nehru University, India
20.	Brandon A Nordin, Senior Vice President, Sales, Marketing & Digital Strategy, ACS Publications, USA
21.	Charu Malhotra, Associate Professor (e-Governance and ICT), Indian Institute of Public Administration, India
22.	Charu Chopra, Director India Programs, Digital Green, India
23.	D Sundar, DuPont Young Professor, Associate Professor, Department of Biochemical Engineering & Biotechnology, Coordinator, DAILAB (DBT-AIST International Laboratory for Advanced Biomedicine), Indian Institute of Technology, Delhi, India
24.	Danish Contractor, IBM Research India, Human Language Technologies Group, India
25.	Deepak Pathak, Professor, Department of CSE, Indian Institute of Technology, Bombay, India
26.	Dhruba Kr Bhattacharyya, Dean, Academic Affairs, and Professor, Department of Computer Science and Engineering, Tezpur University, India
27.	Dhruv Nath, Professor, Information Management , Chair - Entrepreneurship and Incubation Center, Management Development Institute, Professor, Information Management, Chairperson - Entrepreneurship and Incubation Centre, Chairperson - Information Technology Area, India
28.	Dilara Begum, Associate Professor and Chairperson, Department of Information Studies and Library Management & Librarian (Acting), East West University, Bangladesh
29.	Dinesh Gupta, Group Leader, International Centre for Genetic Engineering and Biotechnology, India
30	Donna Scheeder, IFLA, Deputy Chief Information Officer, Congressional Research Service, Library of Congress, USA
31.	Erik-Jan Van Kleef, Vice-President of Sales & Channel Management, 1Science, Belgium
32.	Frank Meng, Director - International Department, PowerCreator (Beijing) Info & Tech Co., Ltd., China
33.	Ganesh Natarajan, Founder - 5F World, Chairman - NASSCOM Foundation & Global Talent Track President - HBS Club of India
34.	Garima Babbar, Head of Strategic Alliances - Education and Skill Development, South Asia, Adobe Systems, India

35.	Gautam Shroff, Vice President and Chief Scientist, Tata Consultancy Services, India
36.	Geeta Malhotra, Country Director, READ India
37.	Gobinda Chowdhury, Professor & Head, Information Science, Department of Mathematics & Information Sciences, Northumbria University, UK
38.	Hadar Miller, Chief Information Officer, National Library of Israel
39.	Heather Brown, Assistant Director, Paper, Books and Preventive Artlab Australia, Arts South Australia, Department of State Development, Australia
40.	Heather J. Devereaux, Sr. Director of Customer Engagement - Marketing, R&D Solutions, Elsevier, The Netherlands
41.	Himanshu Giri, Chief Operating Officer, Pratham Books, India
42.	Jagdish Arora. Director, INFLIBNET, India
43.	Javed Ali, Adobe India
44.	Jean-Marc Comment, Head of the Unit, Département fédéral de l'Intérieur, Swiss Federal Archives AF, Switzerland
45.	John Akeroyd, Senior Consultant, CIBER Research Honorary, Research Fellow, University College London, UK
46.	K Srinivas, Professor ICT, National University of Education Training & Public Administration, India
47.	Kailash Balani, Managing Director of Aditya Books Pvt.Ltd., Balani Infotech Pvt.Ltd., Lawman India Pvt.Ltd., iGroup Infotech India Pvt.Ltd., India
48.	Kalpana Das Gupta, Advisory Board Member at READ Global, Former Director, Central Secretariat Library, Government of India
49.	Kalyan Kumar Bhattacharjee, Deputy Registrar (Stores), Indian Institute of Technology Delhi, India
50.	Kavi Mahesh, Professor and Dean of Research, Director, KAnOE - Centre for Knowledge Analytics and Ontological Engineering, PES University, India
51.	Kiran Karnik, Chair, Oxfam India; Chairman, Indraprastha Institute of Information Technology; President, India Habitat Centre India, India
52.	Kishore Ramdas, Ingale Head, Pune Information Resource Centre, Tata Consultancy Services, India
53.	Klaus Tochtermann, Director of the ZBW - Leibniz Information Centre for Economics and

	Professor for Media Informatics at Kiel University, Germany
54.	Klaus Alexander Pendl, India
55.	Krishna Kumar, Founder & CEO, CropIn Technology Solutions Pvt Ltd, India
56.	KristianJensen, Head of Collections and Curation, The British Library, UK
57.	Liby T. Johnson, Expert in Entrepreneurship Promotion, United Nations Development Programme, India
58.	Lovneesh Chanana, Vice President (Government Relations), SAP India Pvt Ltd, Vice President (Government Relations), SAP India Pvt Ltd., India
59.	M Naina Rani, National Consultant-PPTCT, World Health Organization, India
60.	M K Chaudhary, Executive Director-CIO, ONGC, India
61.	Manas Ranjan Panigrahi, Programme Officer - Education, Commonwealth Educational Media Centre for Asia (CEMCA), India
62.	Mandar Bhagwat, Co-founder, Director and CTO, SpadeWorx Software Services, India
63.	Margam Madhusoodan, Associate Professor, University of Delhi, India
64.	Maria Gaede, Lecturer, Berlin School of Library and Information School, Humboldt-Universität zu, Germany
65.	Matthias L. Hemmje, Professor, University of Hagen, Fakultät für Mathematik und Informatik – Lehrgebiet Multimedia und Internetanwendungen Universitätsstrasse, Germany
66.	Meeta W. Sengupta, Founder Centre for Education, India
67.	Mgr. Anna Janikova, Associate Professor. Insitute of Computer Science, Faculty of Philosophy and Science in Opava, Silesian University in Opava Bezrucovo namesti, Czech Republic
68.	Michael Seadle, Professor, Humboldt-Universität zu Berlin, Berlin School of Library and Information Science, Germany
69.	Mohit Taneja, Head, Innovation Strategy & Support, Innovation & Development Centre Fresenius Kabi Oncology Ltd., India
70.	Moonis Shakeel, Associate Professor, Jaypee Business School, India
71.	Mrinalini Sardar, User-Experience Designer . Adobe InDesign CC., India
72.	Mukhtar ul-Aziz, Director, Libraries and Research, J&K Government, India

73.	Nalini Mahajan, Library Director and Webmaster Marianjoy Rehabilitation Hospital, USA
74.	Neel Mason, Mason & Associates, India
75.	Neeza Singh, INELI Innovator, India
76.	Nidhi Srivastava, Fellow, Centre for Resource & Environment Governance, TERI, India
77.	P Jayarajan, Library Advisor and Chairman, Indian Public Library Advisory Board, Thunchath Ezhuthachan Malayalam University; Former Head, British Council Libraries, India
78.	P K Bhattacharya, Fellow & Area Convenor, TERI, India
79.	P R Goswami, Director (Library & Information), Indira Gandhi National Centre for the Arts, India
80.	Partha Pratim Das, Professor, Department of Computer Science & Engineering and Joint Principal Investigator, National Digital Library Project, Indian Institute of Technology, India
81.	Paul Nieuwenhuysen, Prof. dr. Vrije Universiteit Brussel Pleinlaan, Belgium
82.	Piyush Gupta, Associate Vice President, NISG, India
83.	Prabir G. Dastidar, Scientist/Director, Ministry of Earth Sciences, Government of India
84.	Prabir Sengupta, Distinguished Fellow & Director, TERI, India
85.	Pradeep Chopra, CEO, Digital Vidya, India
86.	Prateek Shah, Founder of Digital Defynd, India
87.	Raghav Aggarwal, Co-Founder, The Fluid AI, India
88.	Rajat Kathuria, Director, ICRIER, India
89.	Rajesh Shewani, Head – Technology and Solution Architecture, Teradata India Analytic Data Platforms, India
90.	Rajiv Mishra, Founder and Managing Director, Total Library Solutions, India
91.	Ramesh Gaur, University Librarian, Jawaharlal Nehru University, India
92.	Ricardo Da Silva Torres, Associate professor, Institute of Computing (IC), University of Campinas (UNICAMP), Brazil
93.	Sameep Mehta, STSM & Manager, Knowledge Engineering and Encrypted Analytics, IBM Research India

94.	Sandeep Chatterjee, Registrar, Indian Institute of technology Delhi, India
95.	Savithri Singh, Principal, Acharya Narendra Dev College, (University of Delhi), India
96.	Shabhat Hussain, President, Indian Library Association (ILA), India
97.	Shahid Rasool, Director, Commonwealth Educational Media Centre for Asia (CEMCA), India
98.	Shalini R Urs, Executive Director & Professor, International School of Information Management (ISIM), University of Mysore, India
99.	Shanmughavel Somu, Senior Manager (IT) – Training & Research, ICT Academy of Tamil Nadu (ICTACT), India
100.	Shantanu Ganguly, Fellow, TERI, India
101.	Sheshadri Chatterjee, Asia Pacific Business Programme Manager, Microsoft Corporation, India
102.	Shivkumar Kalyanaraman, Program Director, Special Initiatives, Sr Mgr, Cognitive Industry Solutions, IBM Research - India, India
103.	Shobana, INELI Innovator, Kerala, India
104.	Somen Chakraborty, Director, SDPA, India
105.	Subrata Das, Industry Director, Public Services, SAP India Pvt Ltd., India
106.	Sudakshina Ghosh, Director (Automotive Industry) SAP India
107.	Sudha Mukherjee, Public Information Officer, Delhi Public Library, India
108.	Suneet Tuli, Ex-Dean, Research & Development, IIT Delhi; presently, Dean, School of Engineering and Applied Sciences, Bennett University, Greater Noida, India
109.	Susmita Chakroborty, Assistant Professor, Calcutta University, India
110.	T Madan Mohan, Science G, Department of Biotechnology, Govt of India
111.	Tania Chatterjee, VP - Head of Delivery, India, Learning & Development, Human Resources, RBS, India
112.	Tauseef Khan, Vice President - New Initiatives, Cropin Technology Solutions Pvt. Ltd, Cofounder & CEO, Gramophone.co.in, India
113.	Tengku Mohd T Sembok, Deputy Vice Chancellor, Faculty of Defence Science and Technology, National Defence University Malaysia
114.	Tom Derrick, Digital Curator, Two Centuries of Indian Print, Digital Research Team, The

	British Library, UK
115.	Uma Kanjilal, Professor, Department of Library and Information Science, School of Social Sciences, Indira Gandhi National Open University (IGNOU), India
116.	Usha Mujoo-Munshi, Librarian, Indian Institute of Public Administration, India
117.	Vivek Singh, Senior Solution Architect, Teradata India
118.	Vunnam Venkaiah, Director, Centre for Education Technology and Learning Science Rajiv Gandhi University of Knowledge Technologies, India
119.	Yashvir Singh, Economic Adviser, Ministry of Environment, Forest & Climate Change, Government of India
120.	Zeenath Reza Khan, Assistant Professor, Faculty of Engineering and Information Sciences, University of Wollongong in Dubai
121.	Jagtar Singh, Professor and Head, Department of Library and Information Science, Punjabi University, Patiala, India
122.	Surinder Kumar, Senior Technical Director, Digital Archiving and Management Group, National Informatics Centre, India
123.	Ashwini Kumar Sharma, Director General, NIELIT, India
124.	C. S. Arora, NABET/QCI Assessor & Visiting Professor {Former Senior Consultant, HRD/NMEICT & Director (EDP), MHA/ORGI, India
125.	Dinesh K. Gupta, Associate Professor & Head Department of Library & Information Science, Vardhaman Mahaveer Open University, India
126.	Gayas Makdumi, University Librarian, Jamia Milia Islamia, India
127.	Gopal Bhushan, Director, DESIDOC, India
128.	H. K. Kaul, Director DELNET and President, The Poetry Society, India
129.	Kala Anjan Dutta, Director, American Center Library, India
130.	L. Subramanyan, Founder & CEO, Trivone, India
131.	N. K. Mehra, President of the Federation of Indian Publishers (FIP), Managing Director, Narosa Publishing House, India
132.	Neena Pahuja, Director General, Education & Research Network (ERNET), (An Autonomous Society of Ministry of Electronics & Information Technology), India
133.	Parveen Arora, Head, CHORD-NSTMIS, Dept of Science & Technology, Government of India

135.	Prasanto K. Roy, Editor, DataQuest, India
136.	R. S. Sharma, Librarian, United Nations Information Centre for India and Bhutan & President, Delhi Library Association, India
137.	S Venkadesan, Director- Learning Resource Center & Information Technology, Indian School of Business, India
138.	S. B. Ghosh, Emeritus Professor, Indira Gandhi National Open University, India.
139.	Sachchidanand Joshi, Member Secretary, Indira Gandhi national Center for the Arts, India
140.	Shubhangi Sharma, Executive Director of Secretariat, IPLM, NASSCOM, India
141.	Sudeshna Sarkar, Professor, Department of Computer Science & Engineering, , IIT Kharagpur, India
141.	Suprabhat Majumdar, Chief Librarian, India International Centre, India
142.	Srikant Sinha, CEO, NASSCOM Foundation, India
143.	Mr Gaurav Dwivedi, CEO, MyGov Cell, Ministry of Electronic and Information Technology, Government of India
144.	Anup Kumar Das, Information Specialist, Center for Studies in Science Policy, Jawaharlal Nehru University, India
145.	Ashutosh Mishra, Scientist “D” and Incharge, National Technical Research Organisation, India
146.	Mayukh Roy Chowdhury, Knowledge Management Professional, KPMG, India
147.	Moorttimee Samantaray, Deputy Librarian and Head, Library and Documentation Division, NCERT, India
148.	N K Wadhwa, National Physical Laboratory, India
149.	Nabi Hasan, University Librarian, Aligarh Muslim University, India
150.	Nanda Gopal Chattopadhyay, CTO - NDL Project, IIT Kharagpur, India
151	Neeti Saxena, British Council Library, India
152	Partha Bhattacharya, Joint Director, Directorate of Innovation & Technology Transfer, Amity University, India
153	Pravakar Rath, Professor of Library and Information Science and Dean, School of Economics, Management and Information Science (SEMIS), Mizoram University, India

154.	Praveen Babbar, Deputy Librarian, Central Library, Jawaharlal Nehru University, India
155.	Praveen K Chowdhury, DGM(Documentation), DLF Ltd., India
156.	Priya Rai, University Librarian, NLU, India
157.	R K Sharma, Librarian, United Nations Information Centre for India and Bhutan, India
158.	R N Malaviya, Library Consultant, India
159.	Rajiv Vij, Deputy Director, DESIDOC, India
160.	Sangeeta Kaul, Co-ordinator, DELNET, India
161.	Sanjay Kumar Bihani, Library Information Officers, Ministry of External Affairs, Govt of India
162.	Sanjeev Kumar, Director- Learning Resource Center, National Institute of Fashion Technology, India
163	Satyandra Singh Dhaka, Director(Library & Information), Ministry of External Affairs, India
164	Sudhir K. Arora, Consultant, Campus of Open Learning-School of Open Learning, University of Delhi, India
165	Tariq Ashraf, University of Delhi, South Campus, India

**INAUGURAL ADDRESS BY MS DONNA SCHEEDER, PRESIDENT OF INTERNATIONAL
FEDERATION OF LIBRARY ASSOCIATIONS AND INSTITUTIONS**

Good afternoon distinguished Ministers, etc. Let me begin by thanking the organizers of this meeting for their kind invitation. It is truly an honor and a privilege to be here and to be asked to give the conference inaugural address.

It is also my great pleasure to bring you greetings from the Governing Board of the International Federation of Library Associations and Institutions, IFLA, the global voice of libraries. The theme of this conference, "Smart Future: Knowledge Trends that Will Change the World" is very timely and I would like to take just a few minutes to discuss with you how very important your work at this conference is to the future of libraries, and to the organizations that you serve as well as to the future of access to information and sustainable development. There will be a smart future but the character of the future and whether it will be inclusive – open to all that is up to us.

Three years ago IFLA launched the IFLA Trend Report which identified 5 key trends in Society that are having major impacts on libraries and access to information and knowledge. In order to understand what is happening in the knowledge sector of the economy we must understand the overall societal trends that are driving these changes. These trends have the potential to represent either positive or negative change and the direction of that change is up to us.

For those of you who are unfamiliar with the IFLA Trend report let me briefly state what these 5 trends are.

The origin of the phrase is from the Latin word auger, auger. The "inaugural address" is a speech given during this ceremony which informs the people of his or her intentions as a leader. I have been given this honor by your conference organizers and I will take this opportunity to help us all think as to why we are spending 4 days of our time at this meeting about the possibilities of a smart future.

As your conference organizers have pointed out in the overview for this meeting, libraries, especially digital libraries, are truly at the heart of knowledge societies; they enable people to access, share, and apply knowledge. It is very important to remember that while we focus on digital solutions to challenges

created by these trends, they are solutions for people to accomplish their goals. We are working for our communities to meet needs that access to information can fulfill. We must put people back at the center of our thinking when we are creating solutions to these challenges.

ONLINE LEARNING WILL TRANSFORM AND DISRUPT TRADITIONAL EDUCATION

BOUNDARIES OF DATA PROTECTION AND PRIVACY WILL BE REDEFINED

HYPER-CONNECTED SOCIETIES WILL RECOGNISE AND EMPOWER NEW VOICES

OUR GLOBAL INFORMATION ECONOMY WILL BE TRANSFORMED BY NEW TECHNOLOGIES

These trends are technology driven and enabled. They are at the core of our new knowledge society.

I see on your program agenda topics that could be responses to the challenges posed by these trends including "Big data and Data Visualization, Innovations in Digital Publishing, Massive On-line Open Courses, and Universal Access and Sharing of Research Publications and Data". For example, your discussions around the theme of digital resources reflect the observation in the trend report that "new technology will expand access to information but also present barriers" and the nature of new online business models will heavily influence who can successfully own, profit from, share or access information in the future. When you look at many of the products on display here the reality of that state will be demonstrated. MOOCs recognizes the second trend online learning will transform and disrupt traditional education by making learning opportunities cheaper and more accessible. It is clear that your conference organizers have been very thoughtful and forward thinking when they planned this program.

It is important to remember though that trends represent change, and what we know about change is that it is better for an organization to lead its own changes than to have ones imposed upon them by others. This is particularly true in our world where technology is disrupting all kinds of economic and social sectors like publishing, government, and academic institutions. We also know the best time to initiate change is before you have to. That is why as IFLA President I have issued a call to Action on 4 levels.

The first is the personal level. What skills and competencies do we need to continue to be successful in the 21st century? Librarians must embrace continuous individual learning to keep their skills up to date

and relevant. We must let go of old ways of doing things, no matter how comfortable we find them. What do our library educators need to do to insure they are providing our libraries and other organizations with professionals who are equipped to provide the transformational services that will keep our libraries and profession strong?

Second, is building the change agenda for our organizations. What will our communities need? What is the change agenda for libraries, archives and the organizations they serve? I see on your program agenda themes that could be responses to this question including digital literacy, standards and policies and collaborative knowledge creation and crowd sourcing.

Many of you are already looking at these trends and asking yourselves where are the possible opportunities that are relevant to our mission? Indeed, this examination is the focus of this conference.

Third, there is a need to develop national and regional policy agendas. This is where national library associations with the active participation of their members, in collaboration with the leadership of their national library need to work with their government authorities. It is important that you consider library associations and national libraries to be your partners. There are several fundamental issues that comprise information policy and these issues impact, the entire digital environment and are also reflected in program areas such as e-lending and copyright. There is recognition by your government of the importance of libraries. A 2008 UNESCO publication discusses the establishment of the National Knowledge Commission of India in 2005. It states its overarching aim is to transform into a vibrant knowledge based society and judging by the speakers and topics at this conference it appears are succeeding. The establishments of a national digital library and the many projects it initiates is more evidence of a recognition by the government of the importance that national policy plays and access to information plays in assisting governments to achieve their goals. But there is still much work to be done here.

Finally and extremely important is the global information policy agenda. As globalization increases we need to work with the authorities like WIPO, the United Nations and UNESCO who make or influence policy at the global level. As the President of the International Federation of Library Associations and Institutions I am here to tell you that IFLA is working hard on your behalf to use these platforms to position libraries for success. The WIPO treaty for copyright exceptions for the blind and physically handicapped and the inclusion of access to information in the United Nations Sustainable Development goals are two most recent examples.

Last year I lead the IFLA delegation to the United Nations during the discussions and debate that resulted in the publication of the 2030 Agenda for Sustainable Development. The International Federation of Library Associations and Institutions (IFLA) believes that increasing access to information and knowledge across society, assisted by the availability of information and communications technologies (ICTs), supports sustainable development and improves peoples' lives. I will speak more about these trends and the challenges they present during other sessions at this conference.

Congratulations on a conference program that will provide you with discussions of the challenges we as information professionals face in confronting these societal trends and that looks at a number of possible responses. However, talk is not enough. We must act. Each one of you must commit to leaving here with a response to the call to action that this conference agenda represents. You must make choices and transform your selves and your libraries accordingly.

I want to thank the conference organizers for putting together such a forward thinking program. You have provided a cornucopia of choices for all participants to build and implement their own change agendas I wish all of you a very successful and fruitful conference and I am looking forward to working with you as IFLA President as we answer the call to action together and position our organizations and ourselves for success in the 21st century. It is up to us to build the change we want. I will leave you with some words from my President, Barack Obama; we are the ones we've been waiting for. We are the change that we seek."

Thank you for your time and attention. May you have a very successful conference.

DETAILS OF PAPER PRESENTATION BY INVITED SPEAKERS

Sl. No.	Subject Group	Title of the paper	Author(s)
1.	Digital Library - Development, Architecture and Management	1. Engaging Users for Collection Management	1. Shalini R Urs
		2. Digital Library: User Perspectives and Institutional Strategies	2. M Madhusoodhan
2.	Digital Literacy: Standards and Policy	1. Digital Literacy Policy and Standards in India: an Overview	1. Bablu Sutradhar
		2. Digital Library Network of South Asia: A special focus on free and open source software (FOSS) movement	2. Dilara Begum
		3. Information management and knowledge for development in Public Policy: Importance of information resource centre (IRC) in public organization compliance with RTI -Bangladesh perspective	3. M Abu Sayeed
3.	Transformation towards Smart Libraries	1. Living Knowledge: Meeting the British Library's Purpose in a Digital Age	1. Kristian Jensen
		2. Transformation Towards Smart Libraries	2. Ramesh Gaur
4.	Collaborative Knowledge Creation Crowdsourcing	1. The Hondigi/L-Crowd Joint Project: A Microtask-based Approach for Transcribing Japanese Texts	1. Atsuyuki Morishima
		2. Collaborative Knowledge Creation and Crowd sourcing	2. Kalyan Kumar Bhattacharjee
5.	Knowledge Management Models and Applications	1. Knowledge Management Tool and Technologies	1. Kavi Mahesh
		2. Big Data Applications in Libraries : Possibilities and Implications: Only topic said, no abstract received	2. Kishore Ramdas Ingale
6.	Big Data and Data Visualization	1. Active Data Management Planning – Opportunities and	1. Matthias L Hemmje

Challenges

		2. Big Data Applications - Powering the Transition to Learning Commons from Printed Page to Digital Age	2. Usha Mujoo Munshi
7.	Digital Library Case Studies and Best Practices	1. Multilingual Access to Digital Libraries - the European use case 2. Role of Medical Librarians in Building Digital Communities	1. Maria Gaeda 2. Nalini Mahajan
8.	Digital Curation & Preservation of Indigenous Knowledge	1. From Meta Data to Data - Search and Discovery 2. Unlocking India's Printed Heritage through Innovative Digital Research 3. Interconnections: Developing an Integrated Framework for Disaster Plan to Safeguard Library Collections	1. Hadar Miller 2. Tom Derrick 3. Heather Brown
9.	Data Science	1. From Information Science to Data Science: new challenges for education and research 2. Open Data in Switzerland	1. Gobinda Chowdhury 2. Jean Marc Comment
10.	Information Storage and Retrieval	1. Information Discovery on the Internet, Using a Search Query that Consists of a Combination of Text and Image	1. Paul Nieuwenhuysen
11.	Semantic Web and Multimedia Content	1. Managing Large Multimedia Data Repositories: An E-Science Perspective 2. Semantic Enhancement Improving Discovery and Discoverability in Bibliographic and Cultural Worlds	1. Ricardo da Silva Torres 2. John Akeroyd
12.	Open Archives Initiatives and Post Metadata Harvesting (OAI/PMH) - I	1. Open Access : Facilitating the Flow of Knowledge	1. Erik-Jan Van Kleef
13.	Open Innovation and New Communication Model	1. Digitization of Science and its Impact on Libraries	1. Klaus Tochtermann
14.	DL Multi-linguality and Interoperability issues	1. Linguistic Semantic Network for Document Representation 2. Towards Integrated Multilingual Access to Diverse Digital Libraries	1. Tengu Mohd T Sembok 2. Akira Maeda

15.	Social Media and Ubiquitous Computing	1. The Bodelian Libraries and Social Media: How we succeed with our strategy 2. How Social Media has taken Our Lives	1. Adam Koszary 2. Meeta W Sengupta
16.	Digital Rights Management and Research Integrity	1. Research Integrity: Long-term digital archiving or knowledge management 2. Emerging IPR laws in India: Threats or opportunities for Digital Right Movements. 3. Measuring, Maximizing and managing Research :The Emerging Matrixes	1. Michael Seadle 2. Somen Chakraborty 3. Tariq Ashraf
17.	E-Learning Platform and Open Educational Resources	1. Online Education Initiatives - necessity, possibilities and challenges for India	1. Shahid Rasool
18.	Enterprise Architecture 2.0	1. A showcase of on-line tools from the TRACE project	1. Alejandro Bia
19.	Integration of Data Warehousing & Mining	1. Data Mining: A Tool for Better Service Delivery	1. Anna Janikova

DETAILS OF CONTRIBUTED PAPER PRESENTATION

Sl. No.	Subject Group	Title of the Paper	Author(s)
1.	Digital Library - Development, Architecture and Management	1. Digital Marketing of Services and Products in Library and Information Centers	1. Bijoy Ketan Panda
		2. Good Practices of Achieving Effective Customer Relationships Using Extended and Smart Outreach Activities	2. Shubhada Apte
		3. Building Digital Repository of NSTMIS Research Publications: A Case Study	3. Parveen Arora, Reeta Sharma, and T P Sankar
2.	Digital Literacy: Standards and Policy	1. Development of Digital Library and Users Perception: With Reference to Manipur University Library	1. Sanasam Sandhyarani Devi
		2. Digital Authentication Systems and Remote Access to E-Resources: A Study	2. Sushant Kumar Panigrahi, Devendrappa T M, and Nihal Alam
3.	Transformation towards Smart Libraries	1. The Delphi Project: Transforming Flemish Libraries to User-Oriented Points of Information	1. Patrick Vanden Berghe
		2. Refocusing with Digital Information Services using Quick Response (QR) Code in Digital Libraries and Information Centres: A Trends to Changing Information Landscape	2. B P Singh
		3. Future of Libraries in the Intelligent Web Era	3. Monika Verma
4.	Collaborative Knowledge Creation Crowdsourcing	1. Collaborations of Scientists & Academic Librarians in the Digital Knowledge Environment: Past, Present, and Promise	1. Martin Kesselman
		2. Behavioural Mechanism of Knowledge Sharing Pattern among Research Scholars	2. Naushad Ali and Daud Khan
		3. Ontology-based Knowledge Construction for University Administration Processes	3. Anand Kumar and B P Singh
		4. Personal Knowledge	4. Pralhad Jadhav

Management (PKM) Framework by
Using Desktop Search Application
– Google Desktop Search Tool

5.	Knowledge Management Models and Applications	1. Technological Publication Process System: Is this missing knowledge in Researchers? 2. Demystifying the Growth: A Case Study of Knowledge Resource Centre of Mahindra Research Valley 3. Krishikosh: Institutional Repository of National Agricultural Education And Research System (Nares) of India: An Analytical Study	1. Somayya Madakam 2. Ashutosh G Joshi 3. G Rathinasabapathy
6.	Big Data and Data Visualization	1. Digital School Libraries in Bangladesh: A Role Model for Changing Lives of the Extremely Poor Children 2. Big Data Management 3. Smart Cities: Envisioning through Big Data Analytics	1. Md. Nasiruddin 2. Zeba Khanam 3. Geetanjali Bihani
7.	Digital Library Case Studies and Best Practices	1. Use of Web-based Library Services by Undergraduate Students: A Preliminary Case Study in the Faculty of Arts in University of Colombo 2. Availability and Uses of Public Access Computers in Academic Libraries in Kaduna State 3. Nehru Centre Library: Infrastructure of the Future	1. M P Rajapaksha 2. Usman A Adam 3. Arati Desai
8.	Digital Curation & Preservation of Indigenous Knowledge	1. Sahitya Sagar: A Digital Repository of Sahitya Akademi Library 2. Digital Library of Traditional Kashmiri Music	1. G Rathina Sabapathy 2. Nadim Akhtar Khan
9.	Data Science	1. Application of Open Source Solutions for Digital Asset Management: a case study of NIT Rourkela 2. Developing Institutional Open Educational Resource Repository in	1. Pushpita Mishra 2. Barnali Roy Choudhury

		Open & Distance Learning Environment: A Model for Netaji Subhas Open University based on Open Source Software	
		3. Evaluation of Major Digital Libraries based on DigiQUAL Protocol	3. P M Naushad Ali and Azra Aftab
10.	Information Storage and Retrieval	1. Classification-based Access Control Methodology in RDF	1. Abhishek P and Kavi Mahesh
		2. Emerging Trends in Search Engines: Engineering Faculty and Students' Perception on Search Engines	2. J Vivekavardhan
		3. Reading MIND: Analysing Sentiments in Texts with Software Toolkit	3. Debarshi Das and Rajarshi Das
11.	Semantic Web and Multimedia Content	1. Empirical Analysis of Indian Political Ecosystem as an Application of Generic Textual Analysis	1. Madhu Nadig
		2. The Difference of Significance in Precision, Recall and F-Measure of Select Search Engines	2. Peerzada Mohammad Iqbal
12.	Open Archives Initiatives and Post Metadata Harvesting (OAI/PMH) - I	1. MetaFast: Web Based Metadata Builder for Large-scale Repositories	1. Surinder Kumar
		2. Interoperability Standards in Digital Libraries: With a Special Reference to OAI-PMH	2. Purbi Dey Kanungo
		3. Use of Open Access by Engineering Faculty: A Case Study of Aissms College of Engineering, Pune, Maharashtra, India	3. Vrushali Dandawate
13.	Open Innovation and New Communication Model	1. Large-scale Metadata Harvesting – Tools, Techniques and Challenges: NDL A Case Study	1. Samrat Guha Roy, B Sutradhar and Partha Pratim Das
		2. An Altmetric Approach to Assess the Research Productivity: Use of Research Gate (RG)	2. Tazeem Zainab and Zahid A Wani
14.	DL Multi-linguality and Interoperability issues	1. Use of Social Networking Sites By the Students and the Research Scholars of Indian Institute of Technology, Delhi (IIT) and Delhi Technological University, Delhi (DTU): A Study	1. Monika Singh
15.	Social Media and Ubiquitous	1. Effectiveness of Social Media	1. Sarwesh Pareek

	Computing	tools in Information Sharing and Collaborative Learning: a Case Study of B.V.B. Vidyashram Pratap Nagar	
16.	E-Learning Platform and Open Educational Resources	<ol style="list-style-type: none"> 1. Use of E-resources by N-List in the College Libraries under West Bengal State University 2. MOOCs: An Overwhelming Opportunity for Librarians 3. E-Learning: Government of India Initiatives: A Critical Review 4. Online Courses on Digital Libraries: An Exploratory Study 	<ol style="list-style-type: none"> 1. Paramita Sen 2. Vanita Khanchandani 3. Alka Rai 4. Vijendra Kumar
17.	Enterprise Architecture 2.0	<ol style="list-style-type: none"> 1. Libraries on Fingertips: A Case Study of Indian Institute of Management Lucknow-Noida Campus 2. Drag The Attentiveness Of Young Voters about The Elections through Social Media In Jakarta, Indonesia 3. Use of Mobile Devices in Enhancing Information Services: Analysis of the Students' Opinion in the University of Delhi 	<ol style="list-style-type: none"> 1. Kavita Chaddha 2. Prida Ariani 3. Saleeq Ahmad Dar and Margam Madhusudhan
19.	Integration of Data Warehousing & Mining	<ol style="list-style-type: none"> 1. Graphic Visualization of Scientometric Data 	<ol style="list-style-type: none"> 1. Chiraag and Kavi Mahesh

DETAILS OF POSTER PRESENTATIONS

S No.	Title of poster	Authors(s)
1.	Knowledge Management: A New Paradigm in the Information Profession	Bappah Magaji Abubakar
2.	Digital Preservation & Access Management	Awchar S S,
3.	E-Learning: Its Concept, Definition, and Challenges Faced in Higher Education	Vikreshwari Dangwal Bhatt and Y S Verma
4.	Information Management and Use of ICT in the Government Engineering College Libraries of West Bengal: An Analytical Study	Narendra Bhattacharya and Subarna Kumar Das
5.	Knowledge Discovery in Databases: An Overview	Kaushal Kishor Chaudhary and Amit Kishore
6.	Development of a Knowledge Repository of Databank and Communication Data Grid for Big/Large Data amongst the DST and CSIR Research Laboratories with the help of NKN [National Knowledge Network] High Bandwidth Backbone Facility	Abhijit Dasgupta and Swastik Sinha
7.	Best practices in digital library services	M Dorairajan and R T Vijaya
8.	Website development with Joomla Content Management System (CMS): A Case Study of Tagore Library, Chitkara University, Himachal Pradesh	Mahipal Dutt
9.	Introduction on Chatbot Technology with Description of ProgramO	Seema Dwivedi
10.	Massive Open Online Course (MOOCs): Challenges and Prospects	Anand Gawadekar
11.	MOOCs and Library & Information Science Education	George, K F
12.	Multilingual Database Develop with Unicode for Indic(Indian) Scripts	B M Gohel, R D Parmar , and N B Gohel
13.	Knowledge Management Research: The Perspective of African Scholars from Google Scholar Database	Yahya Ibrahim Harande
14.	Digital Preservation and Access Management	P Indira
15.	Digital and Mobile Technologies for Managing Library Support to Academic Staff and Students: The Internet Experience of Academic Libraries	Victoria O Itsekor, Chidi Deborah Isiakpona, AderonkeAsaolu, and Nwanne Mary Nwokeoma
16.	Digital Library and Best Practices: A Case Study of Alliance	C N Joshi and Shivaraju, T C

University Library, Bengaluru	
17. Role of Copyright Act in Libraries	Musheer Ahmad Khan
18. Information seeking Behavior of Users with Special Reference to Nehru Memorial Museum & Library (NMML), Library & Information Officer, Nehru Memorial Museum & Library, Teen Murti House, New Delhi, India	Ajit Kumar, Vikas Kumar, and Pankaj Chaurasia
19. Digital Library Case Studies and Best Practices	Ranjan Kumar and Keshav Raj
20. Visualization of Knowledge Map for Yogic Science using FreeMind	Vinod Kumar B L and Khaiser Nikam
21. Scholarly Journal Publishing System-360° View	Somayya Madakam, Chandan K Jha, and Rajesh K Arora
22. Digital Preservation and Access Management: The CSSSC's step into the Virtual World	Jayeeta Majumder and Kamalika Mukherjee
23. Skills and Competencies of LIS Professionals in Digital Environment	R Mohan and B R Doraswamy Naick
24. Free and Open Source Software (FOSS) for Libraries	M Murugan
25. Copyright (IPR) Issues and Professional Ethics in Library and Information Science (LIS) Departments of South Indian Universities, Assistant. Professor, JNT University, Andhra Pradesh, India	B R Doraswamy Naick and Srinivas Alapati
26. Smart Future: Through Web and Technology-based Education System	Omkar Pandey
27. IEEE and NITK Surathkal: A Partnership to Improve Student Engagement with Library Resources	Dhanukumar Pattanashetti and Iranna Shettar
28. Usage of Social Media in University Libraries of Bangladesh—A Study	Md. Zillur Rahman
29. The Use of Information Retrieval Tools by the Postgraduate Students of Mehran University of Engineering & Technology	Jamshoro Liaquat Ali Rahoo, Azam Ali Halepoto, and Pir Roshan S Rashdi
30. Enterprise Resource Planning (ERP) is a boon or bane to the Libraries: A Case Study of Research Centre Imarat (DRDO)	B Naga Mohan Rao
31. Marching towards Providing Excellence Library Services by Google Sites	Gawadekar Anand S and Gautam J N
32. Benefits of Skills and Competency Management for Library	Ravindra D Sarode

and Information Science Professionals	
33. Digital Libraries' Development and Current Status: A Review	Huma Shafiq, Mudasir Khazer, Uzma Qadri, and Iram Mukhtar Mahajan
34. The Changing Landscape and Future of Open Access in India	Leena Shah, Vrushali Dandawate, and Sridhar Gutam
35. Use of Electronic Information Resources: A Case Study,	A P Shanmugam
36. Apprehension of Realization: A Comparative Study of Library and Hospitality Women Managers in Fiji	Uday Chandra Shukla and Chetan Shah
37. Information Seeking Behavior of Researchers of Arabic Studies in Central Universities of India: A Case Study of Delhi University	S N Singh and Tabasum Begum
38. Moodle: Innovative Technology for Enhancing the Classroom Interaction	K Srinivas and D S Thakur
39. Knowledge Discovery and Open Data Mining in the Linked Data Cloud : The Great Digital Divide in the Indian Context - The Bold Truth	Dhanalakshmi Shankar Subramanian
40. Using Research Social Media (ResearchGate, etc.) in Supporting Postgraduate Research and Scholarly Communication	Ahmed Taha
41. User Satisfaction about Library Resources and Need of Marketing: A Study of the NorthCap University Gurgaon (India)	T D Tilwani and Deepak Sharma
42. Digital Rights Management as Information Access Barrier	Bhavani Viswanathan

ICDL 2016 RECOMMENDATIONS

ICDL 2016 Recommendation Committee

Chair

Prof Gobinda Chowdhury

Advisors

Ms Donna Scheeder

Prof Michael Seadle

Members

Dr Shalini Urs

Dr Anna Janikova

Dr Usha Mujoo Munshi

Dr Uma Kanjilal

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Mr M Madhusudhan

Dr Shantanu Ganguly

Preamble

- Data and information form the foundation of all activities related to SDGs
- Access to information and data should be a universal right
- No one left behind is the motto
- Data and information are the driver for
 - Research, education and lifelong learning
 - Business, government and decision-making in every sector
 - Empowering everyone in society including youth, women and people with special needs

Policies

- Information access is a human right and it needs to be formalized as a legal right that bridges the digital divide, and allocates sufficient funding to make it a reality, including free public wireless
- National and international policies should establish clear ethical, behavioral and legal norms in the digital environment
- Policies should address cybercrime, hacking, fake news, and violations of both personal data and intellectual property
- Such policies also need to support standardized technical mechanisms for preventing policy violations

ICT Infrastructure & Systems

- ICT infrastructure and technologies should be robust and connect technology, people, communities and policies
- Broadband access to Internet should be a fundamental right and should be available to everyone, anytime, anywhere including in all public libraries
- Mobile access to internet should be guaranteed for everyone especially to those who are, or have the potential to be, left behind
- Systems and services should be developed using open source technologies, as far as possible; and they should be interoperable, user-centred, platform independent, capable of handling Indian languages and context, and mobile technology enabled
- System development activities should also strive for integration with national programs like Digital India

User engagement

- Conduct collaborative augmentation and sharing of user studies in the context of access to digital content and data for different types of libraries to obtain very rich, detailed data about user experience
- Libraries need to increase virtual networking to be a proactive partner in user engagement with social media and mobile strategies including Mobile Apps

Services

- Foster creation and development of domain-specific open access data repositories on various SDGs and targets with special reference to key sectors such as - Health, Education, Climate Change, Water & Sanitation, and Energy
- Constantly endeavour to upload and make all data available through existing data portal of India
- Create and develop lasting solutions for the challenges posed by digital revolution and providing current & authoritative solutions to deliver resilient long-term digital preservation and access to digital content & services, thereby help derive enduring value from digital collections

Capacity building

- Establish a national committee for Information Education with a mandate to develop a framework, policies and a curriculum with technical, people, management and transferable skills to meet the market demand for information and data professionals
- Create an exemplar national institute called the Indian Institute of Information Management (IIIM) as an institute of excellence offering education, training, research, and consultancy services in the multidisciplinary domain of data/information management.
 - This new multi-discipline at the intersection of the science, technology, and management of information would largely follow the iSchool model in terms of its focus and branding

- Develop OERs, MOOCs and CPD (continuing professional development) programmes for training information professionals in emerging technologies and applications

**VALEDICTORY ADDRESS BY
DR AJAY KUMAR, ADDITIONAL SECRETARY, MINISTRY OF COMMUNICATION
AND INFORMATION TECHNOLOGY, GOVERNMENT OF INDIA**

Good afternoon everyone. Respected Chairman of TERI, Shri Ashok Chawla. I must say that Mr Ashok Chawla's name is something that a lot of us, myself and a lot of colleagues of mine have grown up hearing about his accomplishments as a very distinguished civil servant and it is today truly privilege to be here with you Sir. Director General of TERI Shri Ajay Mathur is an equally accomplished expert. I fondly recollect association with him as Director General of BEE and I must say this on this forum, inspired by the work of BEE we have started the standards regime in electronics which was very much influenced and we tried to kind of always talk about that scheme when we were trying to do that in electronics. Prof. Prabir Sengupta, Prof. Govind Choudhary, Prof. Comment, and other distinguished members on the dais, friends, I must say this that it is truly a privilege to be here to be speaking to such an august gathering on a subject which I can definitely not claim to be having any special expertise on. All I can say is I am possibly here because I am in a sector which is in some way defining the future of this country and I personally think that I am very fortunate to be here at this point of time and having a ringside view of the whole agenda of Digital India and the digital transformation our country is taking place. I must congratulate and compliment the committee and the people whose deliberations have gone behind making the recommendations because each of those recommendations I found extremely pertinent and relevant with respect to the kind of work that is going on and the kind of work that needs to go on with respect to the digital transformation of the country.

The topic of this ICDL 2016 is knowledge trends that will change the world. It is very nebulous to say what constitutes knowledge. Let me give you one interpretation of knowledge which I would like to take also from the recommendations talked about in SDGs;, it talks about no person left behind and these are things which are extremely relevant from our country's perspective. Estonia was the first country who created digital identity for everyone. They were able to create the identity using a sim card. Estonia has about 17 lakh people as its population. If we were to replicate the Estonian model it would be impossible to have funded for that kind of digital identity in a country of 1.25 billion.

Today, we have created for the first time a digital identity of people which is life long, unique, authenticable for roughly 1.09 billion people. 99% of adults are covered under it, at a very meagre cost. The average cost of having created identity for one person has been roughly Rs70-80, about a dollar a piece and today the way it has transformed what we are doing. When I joined the Ministry of Communication and IT as it was called then it took me 7 days to get my sim card as you had to produce

your identity documentation and those went through a verification process and were carefully preserved by telecom companies. Two months back one telecom company which launched its new service managed to issue the same card across the board in less than 7 minutes or less and they have given over 5.5 crore new sim cards in less than 50 days. Very silently without any effect it has been possible to create a whole process of digital identity in this country.

A lot of objections on biometric identity creation; the objections possibly may continue which is fine because I think critiquing, as all of you from academia will appreciate, is the best way to make things more robust and more perfect. But the fact is that today the best form of authentication is now the most closest to perfect way of doing identification is the biometric and therefore all the leading companies in the world, whether it is Apple, whether it is Microsoft, whether it is Google, are moving to biometric method of authentication of identity. This is in some ways knowledge creation. You can today identify a person at a marginal cost of zero and this can be done for every single individual in the country. We can afford it, we can do it, we can bring him as part of the digital identity. It is today possible to open *Jan Dhan* Accounts or any kind of last mile service to the people without really having to worry whether these accounts are being actually opened for distinct individuals or are actually fake accounts. We can have that distinction today.

Using this, last year, 325 million people received benefits from Government of India -- the consolidated fund of India directly into their bank accounts. In the past, the Central government used to give the funds to the State governments, State Governments used to give it to the District Collectors, to the block and to the panchayat and thereafter ultimately to the beneficiary. At each level there would be overheads and there would be time delays. This is now done instantaneously and the person concerned gets the money into his account. 325 million, a large chunk of the people, who get benefit from Government of India are getting the funds directly into their bank accounts -- this is a whole new paradigm of doing work and is something which this kind of authentication had made possible.

We are all familiar with the system of digital signatures using dongles. But very often lot of us give our digital signatures to our CAs so that they can file our income tax returns for us. Each digital signature cost varies between 500-1000 rupees. It is made sure that a document is electronically signed and therefore becomes a legal instrument which can be used. 1000 rupees is not a very big amount but it is a significant amount. I have this very interesting story to say. I used to hold the responsibility of DG NIC and one of the things which government had introduced was that the government has introduced was that the annual reports of IAS officers would be digitally signed and will be made online for the last 2-3 years. All the IAS officers therefore were provided a digital dongle to sign their reports. NIC used to provide it and there was absolutely no problem. One day the NIC's infrastructure which enabled it to generate those digital signatures was breached and therefore NIC stopped supplying it. Lo and behold, there was a big

hue and cry and NIC was told to procure it and give it to all IAS officers and we finally did. We actually procured it from outside and made it available to IAS officers. If all IAS officers were asking for the dongle to be purchased and given, could we have really asked a poor beneficiary in a village to buy that dongle and make an online application which he could electronically sign? How can the last mile man be included?

We have now created an infrastructure which is called e-sign where you can do the same thing at a marginal cost of anything between 50 paisa to one rupee. So from a Rs.1000 dongle you can achieve the same electronic signature on electronic document using e-authentication at a marginal cost of less than one rupee. This again brings me back to the topic that today it is possible for every person in the village at the remotest corner, the most impoverished person, also to be brought into the digital world and be part of this. This knowledge again has been created within India. It started slowly. Initially people were little slow to catch up because everyone is used to doing dongle, now, lot of these e-wallets possibly are using e-sign, lot of other banking and insurance applications are using e-sign, government is using e-sign and that is something which is now enabling us to bring people into the fold of digital world. Yet another application which has been created in India and not prevalent anywhere.

Let me say another example. We are a country which loves paper. Everything we do has a whole set of documents which are attached as part of it. We have created a framework where people can actually have their important papers deposited on the cloud in a private space and they can share these documents to a third person, to any other person with whom they would like to share electronically. A lot of applications like Dropbox, Google drive, and lot of other public cloud spaces provide this facility. What is unique in this facility is that when I share from the digital locker, the recipient treats it as an original certificate as if it is being received from the university. It is not something which I am sharing, it is actually being shared by the university. The concept is that these documents which are actually maintained by the issuer. whether it is a university or a bank or a hospital or whatever you have, a pan card or voter card, this would be actually maintained by the issuer, kept in your locker and shared at will and when received by any recipient. It would be treated as if the original issuer is sharing that document. A framework exists which will then make it possible to deal in a paperless manner. Again, this is something which has not been done elsewhere in the world.

Let me give you one more example before I move on. World over governments struggle for procurement. It is one of the biggest challenges that we face and tons of paper have been used for describing the process that needs to be followed to ensure there is fair, transparent and competitive pricing and yet we all know government ends up buying not the lowest but very often higher than the lowest price that is available in the market. When I have to buy a computer for myself, I don't call for bids or a quotation. Possibly I go to a Flipkart or an Amazon to actually see what are the best prices available, maybe use a tool to compare

prices on various e-com sites and buy the most competitive price and that gives me the most benefits In the government, now, we have created an e-marketplace which works like a typical market place wherein government will be buying and selling from this marketplace in a fair, transparent and open competitive manner. This is the first time anywhere in the world that an e-marketplace is being used as part of government procurement process. World Bank is now coming to study this and to see how this process can be actually applied for public procurement processes world over. The point I was making is it is these changes in the process which technology enables and their application in different aspects of working is something which is creating the new transformation and in some ways the new knowledge. I can go on, there are so many of these examples like agriculture *mandis*. The whole nexus of agricultural *mandis* and local *mandis* is proposed to be broken with the launch of e-National Agriculture Markets where a farmer today is enabled to sell his produce to any part of the country.

The second thing which I wanted to say was this whole focus on open data and open APIs, which will enable lot of people to actually contribute to the learning and knowledge creation process. Social media is the name of the game and in fact, now the government itself is taking a lot of interest in social media. In the new knowledge creation process, the power of peoples co-creation is going to be the determining factor in how the knowledge is going to be created. I remember this story fondly, but when it happened it was not so good The government has launched MyGov as its social media platform. In fact that was the first platform which Prime Minister Mr Narendra Modi launched after coming to power on July 26, 2014 and I happened to be, like I said I was holding charge of DG NIC those days. We in NIC had no experience of developing a social media platform. Social media platform, from technical point of view with the kind of unstructured data it brings in, is quite different from the structured kind of databases which we were used handling in the past. 26th July morning the Prime Minister launched it. The day was a Saturday. After reaching I had barely settled down. A call comes from NIC saying that the portal is down because immediately after inauguration the Prime Minister tweeted was and after that there was such a huge load of traffic on to the platform that the platform was not able to cope up with the traffic. I don't want to go into the details but the next 36 hours were really stressful. Anyway we got teams, we got outside help, we tried to see how we could make it up and we did manage to do that. 36 hours later the portal was again up and running and the NIC team learnt how to deal with more traffic.

It went on fine from July and then Prime Minister decided to go to US in November 2014 and in US, as some of you recollect, he had this first big gathering there. Those days he was very fond of saying that *if you want to connect to me come to MyGov*. So after his very famous speech at Madison Square he said *if you want to connect with me, join me on MyGov*. It was 11.45 in the night in Delhi when he said this and lo and behold within seconds of that the portal again went down. There was concurrency of nearly 70000 that came on to the portal and it went down. We did not know how to handle with that kind of

concurrency at that point of time. We were a little better prepared and in a matter of few hours we could bring back and when the traffic went down we were able to bring back the portal.

Yet in December the Prime Minister chose to go to Australia. He had that big public function there and as expected at the end of the function, he said, *come join me on MyGov*. This time the portal did not go down. Our people had by that time learnt how to handle that kind of concurrency. That is December 2014 and this is December 2016. Several of you may have seen the portal, it is one of the big vehicles of social communication and participation which the Prime Minister uses and the government uses, different ministries use it. But the point I wanted to make is, this kind of learning is today what is creating knowledge in some ways and this is the power of technology where you can actually learn all the time. There is no time when it is not possible to do and this kind of co-creation using open data and open API is one of the most powerful tools that exist today in this technology have started to come.

I would like to talk about two more things before I conclude. If we talk of knowledge, there is a huge energy that one sees in the Start-up world. In the Start-up world, 95% of it is nothing but technology. Bright ideas combined with technology are shaping the future of this country as well as the rest of the world. We were a little late in catching up with the start-up game but I think I am reminded of the Chinese saying which says the best time to have planted a tree was 20 years back but the second best time is today. So, we have caught on the game and today every day we have 3-4 start-ups happening in the country in this digital technology domain. We have 3-4 deals, funding coming on start-ups everyday in this country. Last year we had roughly over 7 billion dollars of funding which came in for start-ups. This year the funding maybe slightly less because last year was an unusually big year but the trend is totally on the upswing. I am sure you would be seeing the vibrancy and the mood that exists in each of the IITs and other places. It is one of the most energizing and beautiful experience as far as I am concerned to go to some of these places where the start-ups bubbling with energy and ideas are always coming up with something new and interesting. I think this is the spirit which is going to define and actually break the bounds of all knowledge as we understand today. This is what really is going to make the difference.

The last point I would like to say, especially considering that a lot of you are from the field of library, we have a weakness in digital technology area and that is our lack of ability to have developed adequate content in local languages. I think libraries have the biggest role to play. Technology can easily solve and it is only a question of application with respect to library management, I don't think it is something today a question on which we need to spend too much time, it is just a question of applying. It is becoming fairly commoditized. There is fair amount of content. What is not available is content in local languages. India is too rich a country in its culture and diversity and we cannot let the uniformity of technology adversely affect the diversity of our languages and culture. The Chinese use Chinese for their digital technology, the Koreans use the Korean language, the Japanese use the Japanese language, the Europeans

use the European language, we don't use our languages, we use English and I think that needs to change. Libraries should endeavour to put as much content in local language. We from our side are trying to do. There are gaps even on technology development in local languages. But there is no difficulty in creating content. The difficulties exist in translating content or providing services in local content. It is difficult to translate content from English to local language or local language to local language or text to speech or speech to text in local languages, some things which are available in English but not in local languages. There we are working on the technology development side of it. But I am also convinced that efforts cannot be done only by governments alone because the work of language is a work which requires a collective and a huge effort. That effort has to come from academia, from industry and from civil society, crowd sourcing, collective learning which I spoke about earlier. So, we need to work in all the regional languages that we have to create content so that the benefit of digital technologies is reaching to all and 'No man left behind' principle is served as far as we go.

Like I said, I have had the fortune of being in this sector in the government which is rare for a person like me to have been associated with this sector for now over about 15 years in one capacity or another but I can tell you it has never been so exciting that I have seen in the last 15 years. The kind of things that are happening now, the transformation this country is going through is absolutely amazing and wonderful and we are all fortunate to be in being part of this journey and part of this endeavour. So, I think let us make the most of it, let us see the country transform and let us see how we can be part of it and contribute to it. Thank you very much.

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ICDL 2016: SMART FUTURE

Knowledge Trends that will Change the World

13-16 December 2016 | IHC, New Delhi, India

CONFERENCE BULLETIN | DAY 1

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INAUGURAL SESSION

THE GLOBAL SIGN POST OF DIGITAL LIBRARY MOVEMENT, IC DL 2016, LAUNCHED IN A GLITTERING CEREMONY

Ms Donna Scheeder, IFLA President-USA
Dr Ajay Mathur, Director-General, TERI
Mr Prabir Sengupta, Distinguished Fellow & Director, Knowledge Management Division, TERI
Dr P K Bhattacharya, Fellow & Area Convener, Knowledge Management Division, TERI

The highly awaited global event, IC DL 2016, had a stylish take-off in a glittering but serene inaugural ceremony, presided over by global icon and IFLA president, Ms Scheeder. Witnessed by a large library fraternity from across the globe, the inaugural ceremony had a promising beginning where Ms Scheeder touched upon some critical issues in digital arena and its impact on the modern society permeating every sector of human life. She emphasized on the need for reducing the digital divide in



developing and developed societies so that fruit of digitization may reach all. She described as to how IFLA launched the IFLA Trend Report some time back and identified five key trends in society that are having major impacts on the libraries and access to information and knowledge. She further observed that in order to understand what is happening in the knowledge sector of economy we must understand the overall societal trends that are driving these changes. Ms Scheeder further stated that libraries, especially digital libraries, are truly at the heart of knowledge societies; they enable people to accomplish their goals. She cautioned that though trends represent change, it is better for an organization to lead its own changes rather than have changes imposed upon them by others as technology is disrupting all kinds of economic and social sectors.

Mr Sengupta in his speech explored the different services provided by the TERI Knowledge Management Division and their value in research being conducted at TERI. It was concurred that during the past few decades the ICT application has changed life of the people in every sense, made people even smarter in handling situations, data, and taking decisions. Smart future is about understanding, visualizing, and exploring the possible scenarios of the future today, to be able to better prepare ourselves. This will help us to design the future based on set goals. Better preparations for the future enables us to alter the direction of an entire marketplace, field, or to prepare industry or prepare for the outcome.

Dr Mathur shared the importance of e-resources, digital library, and their need for a modern society. He also emphasized on seamless accessibility and openness of the digital material.

Dr Bhattacharya presented an overview of the programme stating its twin objectives as innovation in digital knowledge driven services and solutions and bringing digital divide and improve the lives of people in the developing world. Dr Bhattacharya thanked large number of institutions, organizations, and individuals for their support in the run-up to the IC DL 2016.



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ICDL 2016: DELEGATES UNDERGO A LEARNING PROCESS IN EMERGING ICTs APPLICATIONS

FOUR TUTORIALS CONDUCTED BY THE RENOWNED SPECIALISTS AND EXPERTS ON THE FIRST DAY OF ICDL 2016

ICDL 2016 TUTORIAL 1

CREATION AND UTILIZATION OF OER FOR HIGHER EDUCATION

Prof. Vunnam Venkaiah

Former Vice-Chancellor, Jubilee Hills, Hyderabad, India

Mr R Thyagarajan

Head, Administration and Finance, Commonwealth Educational Media Centre for Asia (CEMCA), New Delhi

Dr Manas R Panigrahi

Programme Officer Education, CEMCA-COL, India

In the very first session of ICDL 2016, OER was declared to be the future of open learning through online resources by renowned professionals such as Dr Venkaiah, R Thyagarajan, and Dr Panigrahi, who are working in this area. They also said that the higher educational institutions should design and create content for public so that people can access and expand these further.



The session also focused on UNESCO's recommendations to Institutions about avoiding duplication of work/efforts/technologies. They also favoured making people aware about OER. Some important points were also highlighted during the session—value for money, value addition, and freedom to use and expand in context of online educational resources. Also, National knowledge commission has recognized the role of OER to upgrade the quality of education.



ICDL 2016 TUTORIAL 2

INFORMATION DISCOVERY USING SEARCH BY IMAGE

Prof. Paul Nieuwenhuysen

Vrije Universiteit Brussels, Belgium



The workshop investigated applicability and usefulness of image search and worldwide web. It demonstrated retrieval of semantically similar images, their copies, as well as modified versions. The workshop recommended information and media literacy in this area.



ICDL 2016 TUTORIAL 3

APPLICATION R-SOFTWARE IN BIG-DATA ANALYTICS

Dr Moonis Shakeel

Associate Professor, Jaypee Business School, NOIDA, India

If you want to perform statistical computing, data manipulation, graphical display, and other related actions, Dr Moonish demonstrated how R-software may be the right solution in one of tutorials of ICDL2016. R is an open-source programming language that is freely available on the worldwide web. It has package of 7K libraries in CRAN (Comprehensive R Archive Network). It contains its own statistical algorithms and could be linked to C, C++, FORTRAN, Java Script, and Python programming languages.



ICDL 2016 TUTORIAL 4

BIG DATA ANALYTICS ON VISUALIZE QUASI-STRUCTURED DATA AND SEMI-STRUCTURE DATA

Mr Shanmughavel Somu

Senior Manager (IT) – Training & Research, ICT Academy of Tamil Nadu (ICTACT), India



The tutorial showed how Hadoop may calculate return of investment and generate the stats. Also, for intensive data analysis, Hcatalog, HDFS, Microsoft Excel with ODBC drivers, and Apache Zeppelin may be used.



THE EXPANDING WINGS OF ICDL:

Around 232+ delegates participated from 26 countries including China, Belgium, United Kingdom, United States of America, Israel, and many more on the first day of ICDL 2016. The numbers are still counting.



ICDL 2016 @ SOCIAL MEDIA



Ravi Guria: In many countries Digital libraries play a crucial role in driving development #ICDL @teriin @DEFIndia



Mandar Bhagwat: Do you know by 2020 nearly 50% of your workforce would be millennials? Listen to what #spadeworx needs to say on #smartfuture at #ICDL.



Bibliotheek Pittem: 90% of all digital data has been created in the last 2 years. A big challenge in view of the SDG4 of UNESCO #icdl #winob



ICDL 2016 ON THE SIDELINES . . .

INAUGURATION OF EXHIBITION

Dr Ajay Mathur, Director-General, TERI

Mr Prabir Sengupta, Distinguished Fellow & Director, Knowledge Management Division, TERI

Ms Donna Scheeder, IFLA President-USA

Prof. Michael Seadle, Professor, Humboldt University of Berlin, Germany and others



As an integral part of ICDL, an exhibition of products has been organized which was inaugurated by Ms Donna Scheeder, IFLA President, along with Dr Ajay Mathur, Shri Prabir Sengupta, and Prof. Michael Seadle in the presence of conference delegates.

Over 30 plus exhibitors are taking part in the ICDL 2016 exhibition. The exhibitors have displayed a range of their products and services in the form of e-journals, e-Books, library automation products and services, besides anti-plagiarism software—Turnitin and iThenticate. The RFID solutions, digitization, and database services, remote access solution, e-Library, etc., are the key areas of the exhibition.

M/S Balani Infotech has exhibited their products and services in 12 stalls. The overseas exhibitors include Royal Society of Chemistry (UK), Accucoms (The Netherlands), Begell House (UK), The Institute of Engineering and Technology (UK), and CABI (UK). National Digital Library of India, DELNET, and Digital Empowerment Foundation has also taken part. The exhibition was well attended by delegates with the intense interaction with the exhibitors.



ICDL 2016 FROM SIGNATURE BOARD

“ Search, explore, and engage. ”
Maria

“ Discover the future, discover knowledge, discover yourself. ”
John Akeroyd

“ The world is digital. ”
Seadle

“ Libraries are the key for a smart future for all people. ”
Donna Scheeder

“ Innovation, effort and experiences the recipe for success. ”
Brandon



IN CONVERSATION

MR ADAM KOSZARY
UNIVERSITY OF OXFORD



How you envisage the role of social media in libraries?

Library is all about information. Role of social media is humanizing the libraries and advocating. Using the social media libraries can publicize their curation, research, and resources to users. It can be used to advocate the libraries and its services.

How do you view ICDL as a concept?

I rate the conference very highly. ICDL 2016 is a wonderful opportunity to interact with professionals around the world.



MS NALINI MAHAJAN
DIRECTOR, MEDICAL LIBRARY AND WEB MASTER, WHEATON, USA

How do you envisage future of Digital Libraries?

In United States citizens can access information using mobile and other virtual technologies. Electronic medical network of various hospitals and libraries provide connections to different databases containing consumers' records. These databases empower the consumers in delivering the information, their illnesses history and its possible remedies in advance through two websites namely, <http://www.informationconnection.org>; <http://www.dar24.org>. Simultaneously, the information can be used by the medical professionals in the diagnosis. Technology empowers the patients to interact with doctors from clinics in emergent situations. Thus, the future of digital libraries is bright.

What is your message to the conference delegates?

ICDL is a wonderful place to share the expertise and network with people around the globe. A very good platform for learning from each other and applying the innovative ideas in libraries.

EXHIBITORS' CORNER

MR TUSHAR POPAT
RAPIDRADIO SOLUTIONS PVT. LTD.

What do you say about ICDL 2016?

I give ICDL 9 out of 10 and we are looking forward to interact with more and more people during the four days so that people can understand the RFID technology and its application in libraries.

ICDL 2016: SMART FUTURE

Knowledge Trends that will Change the World

13–16 December 2016 | IHC, New Delhi, India

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KEYNOTE ADDRESS

IFLA PRESIDENT CAPTURES IMAGINATION OF DELEGATES WITH HER POWER-PACKED TALK

Keynote Speaker: Ms Donna Scheeder, IFLA President, USA
Chair: Prof. S B Ghosh, Emeritus Prof. IGNOU, India

Ms Donna Scheeder, President-IFLA, covered several issues related to information and IFLA's guidelines to make information available freely. She suggested bridging the gaps to provide information in Indian perspective.

She further observed that librarians are skilled information professionals. She mentioned the trend reports brought out by IFLA which deal with how citizens can benefit from the information and knowledge and help in building a knowledge society. She elaborated about privacy and data protection in the global world. She talked about speech recognition, language translation/recognition tools, 3D printing technology, and how libraries can contribute towards removing barriers in access to information. She asserted the role of national and global information policies in which role of library associations is crucial.



SPECIAL SESSION 2A

CONTENT, CONTEXT AND TECHNOLOGY: MONETIZING YOUR CONTENT THROUGH NEW MEANS

Chair: Mr N K Mehra, President of the Federation of Indian Publishers (FIP), President of Narosa Publishers, India
Co-Chair: Mr Praveen K Chowdhury, DGM, DLF Ltd, India
Lead Speaker: Mr Brandon Nordin, Senior Vice President, Sales, Marketing & Digital Strategy, ACS Publications, US
Panelists: Mr Kailash Balani, Balani Infotech, India; Prof. Dhruv Nath, MDI, Gurgaon; Ms Garima Babbar, Adobe India; Dr Susmita Chakraborty, Associate Professor, Calcutta University

This session provided a platform for exploring opportunities by publishing industry, entrepreneurs, and online e-commerce platforms to look at issues dealing with monetized content in the digital space. The panel discussed the tools, requisite technology, and architecture needed to implement successful content monetization models.



SPECIAL SESSION 2B

MASSIVE OPEN ONLINE COURSES

Chair: Prof. Dinesh K Gupta, Vardhaman Mahaveer Open University, Kota, India
Co-Chair: Dr Dilara Begum, Associate Professor, East West University, Bangladesh
Lead Speakers: Mr Frank Meng, PowerCreator Info & Tech Co. Ltd, China; Prof. Uma Kanjilal, IGNOU; Ms Barnali Roy Chowdhury, Assistant Prof, Netaji Subhas Open University, India
Panelists: Prof. Andrew Thangaraj, IIT Madras; Prof. Anupam Basu, IIT Kharagpur; Prof. Deepak B Phatak, IIT Bombay; Prof. K Srinivas, ICT, National University of Education Training & Public Administration

Shortening the distance in education, Massive open online course (MOOC) offers free web-based distance learning programme. MOOC is at a very nascent stage with a view of having open access to digital education. One of the great initiatives in this direction is SWAYAM, which is a MOOCs platform by the Government of India. It is the one platform that would bind Indian higher education, both online and offline. Students across all universities in India will be able to earn credits on SWAYAM. The workshop on MOOCs gives a platform to participants to learn and gain more knowledge. This event will explore how MOOCs will revolutionize India's education system.

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FREE FLOW OF ARGUMENTS—COUNTER ARGUMENTS ON DAY 2 FOCUSED ON PARTICIPATORY APPROACH ENGAGEMENT OF USERS AND TRANSFORMING LIBRARIES INTO HAPPENING AND SMART PLACES

TECHNICAL SESSIONS 1A–1B–1C–1D

DIGITAL LIBRARY DEVELOPMENT, ARCHITECTURE, MANAGEMENT

Chair: Dr H K Kaul, Director DELNET, India
Co-Chair: Dr R N Malviya, Library Consultant, New Delhi
Speakers: Dr Shalini R Urs, Executive Director & Prof, University of Mysore; Mr M Madhusudhan, Associate Prof, University of Delhi

DIGITAL LITERACY: STANDARDS AND POLICY

Chair: Dr Jagdish Arora, Director, INFLIBNET, India
Co-Chair: Mr Sanjay K Bihani, Library Information Officer, Ministry of External Affairs
Speakers: Mr Dion Goh Hoe Lian, Associate Prof, Nanyang Technological University, Singapore; Mr Bablu Sutradhar, Librarian, IIT Kharagpur

TRANSFORMATION TOWARDS SMART LIBRARIES

Chair: Ms Shubhangi Sharma, IPLM, NASSCOM, India
Co-Chair: Ms Priya Rai, Librarian, National Law University, New Delhi
Speakers: Dr Kristian Jensen, Head, Collections & Curation, British Library, UK; Dr Ramesh Gaur, University Librarian, Jawaharlal Nehru University (JNU)

COLLABORATIVE KNOWLEDGE CREATION CROWDSOURCING

Chair: Prof. Kavi Mahesh, Prof. & Dean of Research, Director, KAnOE, PES University, India
Co-Chair: Dr Praveen Babbar, Deputy Librarian, JNU
Speakers: Prof. Atsuyuki Morishima, Research Center for Knowledge Communities, Graduate School of Library, Information, and Media Studies, University of Tsukuba, Japan; Dr Kalyan Bhattacharjee, Deputy Registrar, IIT Delhi



The intense talk by Prof. Shalini Urs emphasized on engaging users for collection management and building diverse content to access these widely. Referring

to current trends, she emphasized the need for transformation of libraries into a happening place. **Dr Madhusudhan** explored the possibility of speedy access, relevant content, portability, easy navigation, library app, content marketing, content distribution and engaging with users through Social Media. The papers presented focussed on the role played by digital marketing & digital products in helping the way for a print-to-digital switch. **Dr Jagdish Arora** spoke on E-PG Pathshala, MOOC, other open learning tools for digital literacy, and argued that e-content, would be available in open access through a dedicated Learning Management System as well as through

Sakshat Portal. **Dr Bablu Sutradhar** covered digital literacy programmes by various organizations, such as NCERT, NEUPA, INFLIBNET, NDL, etc. **Dr Dilara Begum** presented a paper on Digital Library Network of South Asia with special focus on free and open source software's (FOSS) Movement. **Dr Ramesh C Gaur** argued that libraries need to redefine their role and come forward as smart libraries with skilled library professionals which provides advanced library and Information service to users. **Dr Kristian Jensen** talked about 'Heritage Made Digital' programme which aims to make heritage digitally available. Some other programmes include Save a Sound and Enhancing our National Reach. **Prof. A Morishima** spoke about 'The Hondigi/L Crowd Joint Project: A Microtask-based Approach for Transcribing Japanese Texts' which is a nationwide digital library cloud sourcing in Japan. **Dr K Bhattacharjee** in his talk referred to crowdsourcing and compared the growth pattern in traditional environment to the modern social media environment. He discussed social media impact in removal of Hussani Mubarak, Egypt, and the recent unrest in Kashmir. **Dr Ganesh Natarajan** talked about Dimension of Digital India, Developing a Digital Country, Creating the Digital Culture while **Mr Mohit Taneja** talked about the strategy in the Digital Innovation Economy through three steps, i.e., Agrarian Economy, Industrial Economy, and Knowledge Economy.



SPECIAL EVENT 3A

DIGITIZATION OF INDIGENOUS KNOWLEDGE

Chair: Dr Sachchidanand Joshi, Member Secretary, Indira Gandhi National Center for the Arts, New Delhi
Co-Chair: Prof. Pravakar Rath, Library and Information Science and Dean, School of Economics, Management and Information Science (SEMIS), Mizoram University, Aizawl
Panelists: Mr Hadar Miller, Chief Information Officer, National Library of Israel, Jerusalem, Israel; Mr P R Goswami/Speaker from IGNCA - Director, Kalanidhi Division, IGNCA, India; Mr Klaus Alexander Pendl, First Counsellor-ICT, Trade and Economic Affairs, Delegation of the European Commission to India; Dr Kristian Jensen, Head; Collections & Curation, British Library, UK; Mr Jean-Marc Comment, Head of the Unit, Departement federal de l'Interieur, Federal Archives AF, Switzerland

Mr Hadar Miller explained about the collection of indigenous cultural heritage of National Library of Israel (NLI) and the recent project to digitize all text written in Hebrew all over the world. It has 18,195 manuscripts and is available to general public through the NLI. **Dr P R Goswami** talked briefly about IGNCA and its unique collection as well as the digital

archive project of IGNCA related to audio, visual, classical music, interviews, etc. He also discussed about the problems faced during the digitization process, such as creation of metadata, standard of metadata, rights, etc. **KA Pendl** spoke about the EUROPEANA, which is managed by European Foundation. It has a collection of 64 million audio-video. **J M Comment** spoke

about Eugene Cattin Photographs Archive—a collection of 3,095 photographs by a postman named Eugene, and Swissair Photograph Archive, photographs collected by Swiss Airline Company from 1910 to 2001 of which 43,648 photographs were digitized.

SPECIAL EVENT 3B

INNOVATION IN DIGITAL PUBLISHING

Chair: Mr Prasanto K Roy, VP & Head, NASSCOM Internet, Mobile & E-com. Council, India

Co-Chair: Mr Sudhir K Arora, Consultant, Campus of Open Learning, University of Delhi

Lead Speaker: Ms Anastasia Matskovich, Director, Begell House, Inc., USA

Panelists: Dr Ricardo Da Silva Torres, Associate Prof, Institute of Computing (IC), University of Campinas (UNICAMP), Brazil; Ms Mrinalini Sardar, User Experience Designer, Adobe India
Mr Javed Ali, Adobe India

Mr Prasanto K Roy said that India has over 1 billion mobile subscribers, of which 350 million internet users are only on mobile base. Virtual reality is the new paradigm for e-publishing. Mr Sudhir K Arora highlighted the key role of digital publishing in providing digital content to the user. Ms Anastasia Matskovich demonstrated about Begell house digital library products such as e-journal, e-book, references, and proceedings. Dr Ricardo Da Silva Torres mentioned about the digital publishing challenges and opportunities for handling multimedia data. Ms Mrinalini Sardar mentioned about the way content is changing in publishing. If there is no conversation, the content will die. Micro content is the future of the publishing industry. Mr Javed Ali shared his ideas about bringing together print and digital media through PDF format.

TECHNICAL SESSION 2A

PANEL DISCUSSION ON LIS EDUCATION AT THE CROSSROADS

Chair: Mr R Subramanyam, Addl Secy, MoHRD

Co-Chair: Ms Sangeeta Kaul, Network Manager, DELNET, India

Panelists: Prof. Gobinda Chowdhury, Northumbria University; Dr Shalini R Urs, Executive Director & Prof, University of Mysore, India; Prof. Paul Niewenhuysen, Prof., Vrije Universiteit Brussel, Belgium; Prof. Uma Kanjilal, LIC, IGNOU, India; Dr Dilara Begum, Associate Professor, East West University, Bangladesh

Gobinda Chowdhury suggested an i-school-based structure for LIS education. To promote education research and development, all professionals should be connected. Uma Kanjilal reviewed SWOT analysis and suggested a revamp of the curriculum. Dr Shalini R Urs emphasized on promoting reading habits among LIS professionals to build curiosity and quest of knowledge. She insisted to privilege the scholarship education which will enhance the level of learning among LIS students.

Prof. Paul Niewenhuysen recommended ICT literacy and diversity in education curriculum for LIS education. Dr Dilara Begum explored the LIS schools and education system in Bangladesh and information literacy, skill development amongst LIS professionals.

TECHNICAL SESSION 2B

KNOWLEDGE MANAGEMENT MODELS AND APPLICATIONS

Chair: Dr S Majumder, Librarian, India International Center

Co-Chair: Mr Mayukh Roy Chowdhury, Knowledge Professional, KPMG, India

Speakers: Prof. Kavi Mahesh, PES University, Bangalore, India; Mr Kishore Ramdas Ingale, Head, Tata Consultancy Services (TCS), India

Dr S Majumder spoke about knowledge management models and applications. Mr Kavi Mahesh's presentation was focussed on knowledge management tools and technologies. Mr Kishore Ramdas Ingale spoke about Big Data opportunities and its challenges.

TECHNICAL SESSION 2C

BIG DATA AND DATA VISUALIZATION

Chair: Dr Praveen Arora, Adviser & Head, NSTMIS Division, DST

Co-Chair: Mr N K Wadhwa, National Physical Laboratory, India

Speakers: Prof. Matthias L Hemmje, University of Hagen, Germany; Dr Usha Mujoo Munshi, Librarian, Indian Institute of Public Administration

Mr Matthias L Hemmje spoke about Active Data Management Planning—opportunities and challenges. He gave an overview about Realizing an Applied

Gaming Ecosystem (RAGE) along with problems, challenges, goals, and various methodology uses for the Big Data Project.

Dr Usha Mujoo Munshi defined big data application and reuse of the data. She explained how to create, harmonize the structure and unstructured data for future dissemination and about the role of the librarians who are to be at par with the corporate world in policy decision making.



TECHNICAL SESSION 2D

DIGITAL LIBRARY CASE STUDIES AND BEST PRACTICES

Chair: Mr M Madhusudhan, Associate Prof, University of Delhi

Co-Chair: Dr Tariq Ashraf, Deputy Librarian, University of Delhi, India

Speakers: Ms Maria Gaede, Lecturer, Berlin School of LIS, Humboldt-Universität zu Berlin, Germany; Ms Nalini Mahajan, Director, Medical Library & Web Master, Marianjoy Rehabilitation Hospital, US

Dr M Madhusudhan talked about the merits and demerits of the digital library and its implications.

Ms Nalini Mahajan talked about tremendous changes and technological advancements that are transforming the entire healthcare industry.

Mr Usman A Adam discussed about the public access computers (PACs) in academic libraries. He showed that access to the internet and library catalogue, etc., was the major purpose of the PACs.

ICDL 2016 @ SOCIAL MEDIA



Aanchal Mittal: Information literacy is imp for a society, says Paul - Panel discussion on LIS education at the crossroads in progress #ICDL #smartfuture



DEFIndia: Culture and attitude are the most imp things for knowledge management says Shantanu Ganguly of @teriin at #ICDL



Al-Amin Yusuph: #Libraries espl #Digitallibraries are of great relevance in the road towards achieving the 17 #SDGs - @alyusuph @UNESCO at #ICDL @DEFIndia



Ganesh Natarajan: Wonderful speaking about @_DigitalIndia at the TERI KM conclave today !



EXHIBITIONS



POSTER PRESENTATIONS



WORKSHOPS ENGAGE DELEGATES

Six thematic workshops, delivered by renowned experts and specialists were a huge draw with delegates.

Innovation Management: Balancing Creativity with Discipline by Dr Gautam Shroff, Knowledge Management for Generations Y and Z by Mandar Bhagwat, Ontology-based Knowledge Management by Dr Kavi Mahesh, The Make or Break—What Makes Your Business, Businessworthy by Tania Chatterjee, Knowledge Management for Innovation by Anirban Chatterjee, Collaborative Knowledge Sharing and Crowdsourcing by Athar Ali, dwelt upon topics like knowledge management, strategic think tank, customer services, advocacy, re-use of intellectual capital, linkage of knowledge management and innovations, and knowledge sharing culture. The speakers emphasized on the knowledge innovation, social data, web access, web portals, designing support system, data mining, global people survey (GPS), and development of marketing and business communication effectively in order to provide an understanding of the static domain knowledge that facilitates knowledge retrieval, storage, and sharing and dissemination.

CULTURAL PROGRAMME



NATIONAL DIGITAL LIBRARY OF INDIA STEALS THE LIMELIGHT AT ICDL 2016*

National Digital Library (NDL) of India, showcased at ICDL 2016 is a virtual teaching-learning evaluation –knowledge discovery and innovation platform which helps collaborative, personalized, self-paced, new-age multi-media education at all levels. It is a single window access to learners for e-contents working as an umbrella over existing digital repositories. It was concurred that NDL will be an enabler of learning by making learning resources accessible to all, will help students to prepare for entrance and competitive examinations, will enable people to learn from and adopt best practices from all over the and support the continual evolution of a new pedagogy of learning and new opportunities to leverage ICT in education.

*Day 1

IN CONVERSATION



PROF. GOBINDA CHOWDHURY,
NORTHUMBRIA UNIVERSITY, UK

Kindly tell us something about your experience at ICDL 2016?

The experience is dynamic and cosmopolitan. Meeting people from all over the world is amazing. I have been coming to ICDL from the last 13 years and found that ICDL 2016 varied from the previous editions. The theme selection is a blend of academic and industry presence.

Open access movement is losing its momentum. Your viewpoint on this.

I do not think that open access movement is losing its momentum. In fact, it has been gearing up. Funding agencies in UK have made it mandatory to publish the funded research in open access journals.

What is your message to LIS professionals in India?

ICDL 2016 should be a wakeup call for all LIS professionals. It is the time for linked data, open data, and open access.



PROF. DHRUV NATH
MDI GURGAON

Kindly demystify Angel funding.

Angel funders are group of investors who put their own savings into starts-up with the hope of sharing profits. They are shareholders in the company and are not listed at the stock market. Most of the time they lose their money, sometimes they average it out, and in very few cases they earn as well.

If the start-ups lose money most of the time, how does the concept sustain itself?

The concept will sustain over time as it is spare money and is driven by the spirit of entrepreneurship and doing something important and interesting in life.



DR DINESH GUPTA
VMOU, KOTA

How do you look at OER in India?

I am a great advocate of OER. All academic content on web could be created with the output of OER. OER has bright future in India since India has large number of teachers and students.

What is your message to ICDL?

Digital library concept should be spread to lawyers, doctors, teachers, apart from the library professionals.

ICDL 2016: SMART FUTURE

Knowledge Trends that will Change the World

13–16 December 2016 | IHC, New Delhi, India



CONFERENCE BULLETIN | DAY 3

www.teriin.org/events/icdl

PLENARY SESSION 2

PUTTING SMART FUTURE IN A FAST LANE THROUGH VIRTUALIZATION

Chair: Dr Ajay Mathur, Director General, TERI

Keynote Speaker: Mr Shrikant Sinha, CEO, NASSCOM Foundation, India

Delivering the plenary talk on Day 3 of the Conference, **Mr Sinha** captured the process of digital transformation in society and explored how libraries have reached users on their desks. He talked about empowering the power giving example of mobile phone's usage and importance in day-to-day activities. He further talked about the digitization, disintermediation, mobilization, screenfiction, intelligization, automation, virtualization, anticipation, prediction, re-humanization, etc. He gave the idea of smart diamond to define smart cities and explained the smart governance, smart energy, smart buildings, smart healthcare, smart citizen, etc. He also expressed the idea of waste management system and emphasized on e-waste management. During his presentation, he showed various facts and figures about the digital literacy mission.



SPECIAL SESSION 4A

UNIVERSAL ACCESS AND SHARING OF RESEARCH PUBLICATIONS AND DATA: A STRATEGY TOWARDS OPEN KNOWLEDGE

Chair: Mr Klaus Tochtermann, Director, ZBW-Leibniz Information Centre for Economics and Prof., Media Informatics, Kiel University, Germany

Co-Chair: Dr Anup Kumar Das, Information Specialist, JNU;

Lead Speaker: Ms Neeta Verma, Director-General, National Informatics Centre

Panelists: Mr Leslie Chan, Associate Prof, University of Toronto at Scarborough; Mr Erik-Jan Van Kleef, VP, Sales & Channel Management, 1Science, Belgium; Prof. Suneet Tuli, Dean, Bennett University, Gr.Noida; Dr Prabir G Dastidar, Scientist/Director, Ministry of Earth Sciences, Gol; Ms Nidhi Srivastava, Fellow, Centre for Resource & Environmental Governance, TERI

Klaus Tochtermann explained how research remains unnoticed due to charged domain and why we need increased open access (OA) for sharing research. He also explained the policy of OA in his institution. **Suneet Tuli** and **Nidhi Srivastava** spoke about the legal issues and licensing policy of OA while **Prabir G Dastidar** emphasized upon OA and research sharing for public funding bodies. **Mr Van Kleef** dwelt upon the gold and green access of publications and how European countries have different views on access.

SPECIAL SESSION 4B

SMART WAYS TO PUBLISHING AND DIGITAL MARKETING

Chair: Mr L Subramaniam, CEO, Trivone & Former Editor, Data Quest

Lead Speaker: Mr Heather Devereaux, Sr. Director, Elsevier, The Netherlands

Panelists: Mr Adam Koszary, Project Officer, Bodleian Libraries, UK; Mr Seshadri Chatterjee, Microsoft Corporation, India; Prof. Dinesh K Gupta, Head & Director Research, Vardhaman Mahaveer Open University, Kota, India; Mr Pradeep Chopra, CEO, Digital Vidya

According to Digital Trends Report 2015 by Adobe, over 43% of companies consider digital marketing as an integral part of organizations' marketing strategy. It is the increasingly digital nature of the world that is the catalyst for propelling marketing into a more elevated role within the organization. In the strategic digital marketing domain, marketing content preparation remains the core issue. Social and mobile content were most commonly used avenues in digital marketing. These supplemented by data analytics, have become a powerful tool for high value investments and to facilitate decision-making processes in marketing.

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ENRICHING TALKS BY INVITED SPEAKERS ON CONSERVATION AND PRESERVATION

TECHNICAL SESSION 3A-3B-3C-3D

DIGITAL CURATION & PRESERVATION OF INDIGENOUS KNOWLEDGE

Chair: Dr Ramesh Gaur, University Librarian, JNU, India

Co-Chair: Md. Nasiruddin, Department of Library & Information Science, National University, Bangladesh

Speakers: Mr Hadar Miller, National Library of Israel, Jerusalem, Israel; Mr Tom Derrick, Digital Curator, The British Library, UK; Mr Heather Brown, Assistant Director of Paper, Books and Preventive, Artlab, Australia

DATA SCIENCE

Chair: Dr Usha Mujoo Munshi, Librarian, Indian Institute of Public Administration, India

Co-Chair: Mr Ashutosh Mishra, Scientist "D" and Incharge, NTRC Library, National Technical Research Organisation, India

Speakers: Prof. Gobinda Chowdhury, Prof & Head, Information Science, Northumbria University; Mr Jean Marc Comment, Head of the Unit, Departement federal de l'Interieur, Federal Archives AF, Switzerland

INFORMATION STORAGE AND RETRIEVAL

Chair: Prof. J N Gautam, Pro Vice-Chancellor, Jiwaji University, Gwalior, India

Co-Chair: Dr Nabi Hasan, University Librarian, Aligarh Muslim University, India

Speaker: Prof. Paul Nieuwenhuysen, Vrije Universiteit Brussel, Belgium

SEMANTIC WEB AND MULTIMEDIA CONTENT

Chair: Dr Shalini R Urs, Executive Director & Prof., International School of Information Management (ISIM), University of Mysore, India

Speakers: Mr Ricardo da Silva Torres, Associate Prof, Institute of Computing (IC), University of Campinas (UNICAMP), Brazil; Mr John Akeroyd, Senior Consultant, CIBER Research Honorary Research Fellow, University College London; Dr Shahid Rasool, Director, Commonwealth Educational Media Centre for Asia (CEMCA), India



make this data available for future use. **Mr Jean Marc** defined open government, data strategy, and the situation of open data in Switzerland.

Mr Paul Nieuwenhuysen discussed the concept of image search as well as image and text combination search. He tried to establish the hypothesis that a combination search increases the precision.

Mr Ricardo da Silva Torres spoke on managing large multimedia data repositories and showed video of the project undertaken by Microsoft-FAPESP (Virtual Institute). He explained the E-phenology project, which deals with image processing. **Mr John Akeroyd** discussed application of semantic layer over database for discovery of bibliographic records as well as unstructured data. He elaborated on crowd-sourced vocabulary, Machine learning indexing, controlled vocabulary tools, and some European projects.

Mr Hadar Miller narrated interesting journey from metadata to data search and discovery from print to digital for National Library of Israel from 2010 to 2016. **Mr Tom Derrick** spoke on unlocking India's printing heritage through innovative digital research of 22 South Asian Languages and his experience of converting 4,000 manuscripts in British Library. **Ms Heather Brown** talked about integrated framework for disaster plan to safeguard for library collections and argued that IFLA Disaster Preparedness Guidelines help to safeguard the heritage collections of Indian libraries.

Prof. Gobinda Chowdhury presented an overview of Research Data Management. He explained about data repository and challenge to



SPECIAL SESSION 5A

DIGITAL CONVERGENCE AT BOTTOM OF THE PYRAMID

Chair: Mr Gaurav Dwivedi, CEO, MyGov Cell, Ministry of Electronic and Information Technology, Government of India

Co-Chair: Dr R K Sharma, Librarian, UN Information Center, India

Panelists: Mr Alekhya Dutta, Associate Fellow, Energy Environment Technology Development, TERI, India; Mr Tauseef Khan, Co-founder & CEO, Gramophone Co., India; Mr Krishna Kumar, CEO, CropIn, India

Information and Communication Technologies (ICT) have opened up uncommon opportunities in urban and rural areas for improving quality of both natural environment and human well-being. ICTs, if properly designed, will be most meaningful to urban and rural families, to reach 'the unreached' in terms of knowledge and skill empowerment and help to convert the vast scientific know-how, now available, into field level know-how. At present, this access is very limited in rural areas because of some hurdles, however, with increase in start-up-based digital revolution and some government and NGOs initiatives, the situation is improving. This session highlighted some of the cases and also raised pertinent issues.



TECHNICAL SESSION 4A-4B-4C-4D

OPEN ARCHIVES INITIATIVES AND POST METADATA HARVESTING (OAI/PMH)-I

Chair: Dr Gyas Makdumi, Former University Librarian, Jamia Milia Islamia, New Delhi
Co-Chair: Ms Neeti Saxena, Manager, British Council, India
Speaker: Mr Erik-Jan Van Kleef, Vice-President of Sales & Channel Management, 1Science, Belgium

OPEN INNOVATION AND NEW COMMUNICATION MODEL

Chair: Ms Kala Dutta, Director Library, American Center Library
Co-Chair: Dr Siva Chidambaram, Chief Librarian, AIIMS
Speaker: Mr Klaus Tochtermann, Director of the ZBW-Leibniz Information Centre for Economics and Prof for Media Informatics at Kiel University, Germany

DL MULTI-LINGUALITY AND INTEROPERABILITY ISSUES

Chair: Prof. Sudeshna Sarkar, Professor and Head, CSE, IIT Kharagpur
Co-Chair: Dr Sanjeev Kumar, Director-Learning Resource Center, National Institute of Fashion Technology
Speakers: Dr Tengu Mohd T Sembok, Deputy Vice Chancellor, Faculty of Defence Science and Technology, National Defence University, Malaysia; Prof. Akira Maeda, Department of Media Technology, College of Information Science and Engineering, Ritsumeikan University, Japan

SOCIAL MEDIA AND UBIQUITOUS COMPUTING

Chair: Dr Alejandro Bia, Associate Prof, Miguel Hernandez University, Spain
Speakers: Mr Adam Koszary, Project Officer, The Museum of English Rural Life & Communications and Social Media Officer, Bodleian Libraries, UK; Ms Meeta W Sengupta, Consultant, Social Media

Revolving around world of open access issues, challenges, and its standards, Mr Erik-Jan Van Kleef demonstrated 1Science libraries to benefit from open access.

Mr Klaus Tochtermann spoke about digitization of science and its impact on libraries. He also discussed about the European open science cloud (EOSC) for collective information centres. Mr B Sutradar talked about the metadata and its kinds applied in NDLP project for the Indian repositories.

Mr Tngum T Sembok discussed big data, AI, robotics, visualization, search query formulation in web IR system and also emphasized on semantic and need to be promote better search system. Prof. Akira Maeda talked about the relationship



between the digital humanities and digital libraries across language and record linkage.

Mr Adam Koszary presented the paper on strategy for the development of library collection and user development. He explained Bodleian Libraries four social media channels (Facebook, Instagram, Instant Messaging, and Twitter).

Ms Meeta W Sengupta discussed educational professional policies and social networking tools which are useful for day to day life. She explained about business case of social media: impact, branding, etc.



SPECIAL SESSION 5B

ACADEMIC INTEGRITY IN DIGITAL WORLD

Chair: Prof. Michael Seadle, Humboldt University of Berlin, Germany
Co-Chair: Mr Partha Bhattacharya, Associate Director, Amity University, Noida
Speaker: Dr Zeenath Reza Khan, Assistant Professor, University of Wollongong, Dubai
Panelists: Dr Savithri Singh, Principal, Acharya Narendra Dev College, University of Delhi; Dr Sandeep Chatterjee, Registrar, IIT Delhi, New Delhi; Mr Neel Mason, Director, Mason Associates, India; Dr Ramesh Gaur, Librarian, Jawaharlal Nehru University, New Delhi

Dr Zeenath Reza Khan talked about the scandal of academia and need for developing a factor model to understand the impact factors in higher education as students are likely to e-cheat. Dr Ramesh Gaur talked about the plagiarism in higher educational institutions and mentioned *accidental plagiarism* and *willful plagiarism*. Dr Sandeep Chatterjee discussed higher education in India and tendency of cheating among students in higher educational institutions.



Dr Savithri Singh spoke on creative common licenses to promote academic integrity, on issues while creating content, use of copyright, lack of awareness among academicians on copyright issues, components of common licensing, etc. Mr Neel Mason talked about intellectual property rights/copyright issues and mentioned that providing increased access to people. He also explained issues of ideas vs expression and availability vs permissions.

ICDL 2016 @ SOCIAL MEDIA



Adam Koszary: #ICDL@Meetasengupta doing an amazing job of boiling down social media: quicker than email, egalitarian, connectivity and stories.



bibliotheek pittem: "Stories are data with a soul"-Brené Brown, quoted by Heather Deveraux on Smart ways to digital marketing at #ICDL



Iranna Shettar: "Understand your Readers that is your bible."-L Subramaniam, CEO, Trivone & Former Editor, Data Quest. #ICDL



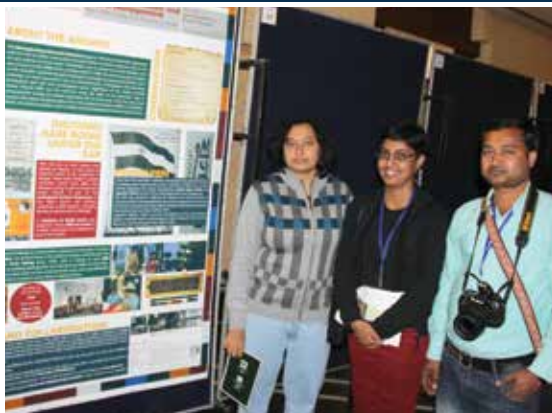
Anil Jha: institution need to nominate #openAccess expert #ICDL Klaus Tochtermann



EXHIBITIONS



POSTER PRESENTATION



WORKSHOPS @ DAY 3

Workshops on Day 3 covered interesting topics such as need and emergence of bioinformatics, sources, types, characteristics, stages involved in big data analytics, etc.

Mr Raghav Agarwal discussed about application of artificial intelligence describing the paradox, model of AI and its possibilities. **Mr Subrata Das** spoke on Big Data Interventions in industries.

Mr Ganesh Das explained TPDDL, power portfolio management solution, specially SCADA.

He also explained smart meter data analysis through graphics method.

Dr Dhruva K Bhattacharya threw light on how the volume of data with variety is dynamically added with the high velocity in every field, including bioinformatics, and elaborated the various challenges of big analytics criteria for the study of human disease network, disease association network. **Dr Dinesh Gupta** elaborated the importance of big analysis on the prediction of early stages of cancer in kidney while **Dr A K Mishra** by covered the importance of big data analytics in agri-bioinformatics in IARI, ICAR using ASHOKA, and 52 open source software and cloud computing. **Dr D Sundar** covered the importance of zinc finger protein, transcription activator like effector protein, and clustered regularly interspaced short palindromic repeats as the three tools for the application of big data for genome editing in regenerative medicine.



WORKSHOP @ DAY 2



CULTURAL PROGRAMME



IN CONVERSATION



PROF. KLAUS TOCHTERMANN
KIEL UNIVERSITY, GERMANY

Your thoughts on ICDL 2016.

This is my first visit to ICDL and India. I am overwhelmed by the conference and innovative ideas of themes and talks of speakers from academia and industry. I would like to attend the next ICDL.

How you visualize the future of DL?

The future of libraries is digital and it is apparent that digital libraries are flourishing while the print version is going down day by day. Those who do not go digital will disappear one day.

What is your message to the conference delegates and LIS professionals in India?

Continue working hard and put all your efforts in the digital movement. Come again in ICDL with new ideas!



PROF. PAUL NIEUWENHUYSEN
VRIJE UNIVERSITEIT BRUSSELS, BELGIUM

What are your thoughts on the ever-widening digital divide ?

The gap amongst user friendly aspects, machinery, and computing infrastructure is widening. People do not understand what is going on inside their devices and are uncertain about sustainability.

Your thoughts on Open Access.

Open access (OA) is a good initiative but is a danger to the libraries. The significance of libraries will be diminished if OA will evolve completely, although 100% OA will never be a reality.



PROF. UMA KANJILAL
IGNOU

What are your views regarding ICDL and DL?

I have been a regular participant at ICDL over the years. Although individual efforts for digital libraries are taking place all over the country, a single platform consolidating all such efforts should be contrived in the future.

How can we overcome digital divide between rural and urban India?

More funds should be released to set up infrastructure and mobile technology should be spread to provide online education on smartphones.

What do you see beyond current scenario?

We should move forward beyond the library boundaries and prepare the (library) professionals to provide updated corporate information services.

ICDL 2016: SMART FUTURE

Knowledge Trends that will Change the World

13-16 December 2016 | IHC, New Delhi, India



CONFERENCE BULLETIN | DAY 4

www.teriin.org/events/icdl

PLENARY SESSION 3

ROLE OF INFORMATION IN MEETING SDGs

Chair: Ms Donna Scheeder, IFLA President, USA

Co-Chair: Dr R K Sharma, Librarian, UN Information Center, New Delhi

Panellists: Mr Al Amin Yusuf, Advisor, UNESCO, India; Ms Geeta Malhotra, Country Director, READ India; Dr Amarjeet Kaur, Former Director, NLB, Singapore; Mr Yashvir Singh, Economic Adviser, MoEFCC, Government of India

Ms Geeta Malhotra elaborated READ India's efforts to build community space and libraries. She spoke about the role of information in terms of whom, how, when, where, and why. **Ms Amarjeet Kaur** detailed how the library services in Singapore are classified according to the age criterion and the role of library services in bridging the digital divide, green libraries for children, and access to equal education. **Mr Yashvir Singh** mentioned about automation and information dissemination as the two parts of IT and informed that Government of India is developing the IT sector through programmes, policies, and schemes. TERI is one such Centre. **Dr R K Sharma** said that open data and knowledge is important for information dissemination. **Ms Donna Scheeder** spoke about the role and implementation of libraries for SDGs.



VALEDICTORY SESSION

Welcome Address: Mr Ashok Chawla, Chairman, TERI

Special Address: Dr Ajay Mathur, Director General, TERI

Special Address: Mr Prabir Sengupta, Director-TERI LIC, New Delhi, India

ICDL 2016 Recommendations: Prof. Gobinda Chowdhury, Chair, ICDL 2016 Recommendations

Valedictory Address: Dr Ajay Kumar, Additional Secretary, Ministry of Electronics Technology, Government of India

Vote of Thanks: Dr Shantanu Ganguly, Fellow, Knowledge Management Division, TERI

Delivering the Welcome Address, **Mr Chawla** congratulated everyone on the success of ICDL 2016. **Dr Mathur** talked about digital initiatives and role of library. He also emphasized on need to create system for accessible knowledge through digitization. Mr Sengupta expressed his happiness to be a part of this conference as well as the organizing division. He emphasized that this conference will contribute to the 'Digital India' slogan.

Prof. Chowdhury presented his remarks on ICDL. **Dr Kumar** emphasized on the role of library in local language translation and content development in local languages. He said that libraries can be key players for 'Digital India' initiative.

The Conference concluded with the vote of thanks by **Dr Ganguly** thanking everyone for their participation and support.



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TECHNICAL SESSION 5A-5B-5C-5D

DIGITAL RIGHTS MANAGEMENT AND RESEARCH INTEGRITY

Chair: Dr P K Bhattacharya, Fellow & Area Convenor, Knowledge Management Division, TERI

Co-Chair: Dr S S Dhaka, Director, Library and Information Centre, Ministry of External Affairs

Speakers: Prof. Michael Seadle, Humboldt University of Berlin, Germany; Dr Somen Chakraborty, Director, SDPA; Dr Tariq Ashraf, Deputy Librarian & Head, South Delhi Campus Library, Delhi University

E-LEARNING PLATFORM AND OPEN EDUCATIONAL RESOURCES

Chair: Prof. Gobinda Chowdhury, Head, Information Science, Department of Mathematics & Information Sciences, Northumbria University, UK

Co-Chair: Dr Moorttimee Samantaray, Deputy Librarian and Head Library and Documentation Division, NCERT, New Delhi

Speaker: Dr Shahid Rasool, Director, Commonwealth Educational Media Centre for Asia (CEMCA), India

ENTERPRISE ARCHITECTURE 2.0

Chair: Dr C S Arora, NABET/QCI Assessor & Visiting Professor; Former Senior Consultant, MHRD/NMEICT & Director (EDP), MHA/ORGI

Co-Chair: Dr R N Malviya, Library Consultant, New Delhi

Speaker: Prof. Alejandro Bia, Associate Prof, Miguel Hernandez University, Spain

INTEGRATION OF DATA WAREHOUSING & MINING

Chair: Dr M Madhusudhan, Associate Professor, DU

Co-Chair: Dr S Venkadesan, Director, LRC, Indian School of Business, Hyderabad

Speakers: Prof. Anna Janikova, Associate Prof., Insitute of Computer Science, Faculty of Philosophy and Science in Opava, Silesian University in Opava, Czech Republic; Mr John Akeroyd, Senior Consultant, CIBER Research, Honorary Fellow, University College London



H-index, etc. While discussing e-learning platforms and open educational resources, **Prof. Chowdhury** presented his views on usefulness of these sources for all the students, including the research fellows. **Dr Rasool** spoke on on-line education initiatives done by CEMCA. He discussed knowledge per-capita, massive open online courses, global learning community, etc.

Prof. Bia showed the result of the TRACE project from the point of the view of the DHW Research Group at the Miguel Hernandez University. The project has served to integrate and evolve several tools created to make working with XML, TEI, and TMX faster and easier.

Dr M Madhusudhan gave a brief introduction on data warehousing and data mining. **Prof. Janikova** spoke about use data mining for library management and user service. She also gave some input to how to get OPAC effective.

The session started with the opening remark on importance of digital rights management and research integrity in present digital era. **Prof. Seadle** focussed on three key aspects of research integrity: plagiarism, data falsification, and image manipulation. **Dr Chakraborty** covered Intellectual Property Right Laws, Indian Copyright Act 1957 and its Violation. He gave example of copyright violation in Music Industry. **Dr Ashraf** spoke about measuring the research impact, citation analysis, and concerns related with citation count, impact factor and



SPECIAL SESSION 6B

STEPPING TO SMART FUTURE: APPLICATION OF INTERNET OF THINGS (IOT) FOR SDGs

Chair: Dr Neena Pahuja, DG, ERNET India

Speakers: Mr M K Chaudhary, Executive Director-CIO, ONGC, New Delhi; Dr Shivkumar Kalyanaraman, Program Director, Special Initiatives, Senior Manager, Cognitive Industry Solutions, IBM Research, India

Panelists: Mr Arijit Mukherjee, Senior Scientist, Embedded Systems & Robotics Research, Tata Consultancy Services, India; Ms Sudakshina Ghosh, IOT Specialist, SAP India

In the session, **Dr Pahuja** highlighted how the concept of IoTs has become a part of every citizen's life and provided details of various government/corporate projects. **Dr Kalyanaraman** emphasized on visualization (share) of IoTs to increase productivity in the energy sector by citing the example of URJAR innovation project repackaging system and e-waste management system. **Mr Das** highlighted the ICT infrastructure of ONGC systems and the various related applications of IoTs and their use in day-to-day industrial operations. **Mr Mukherjee** spoke about IoT applications in everyday life and how these have become 'internet of every-thing' across the globe. **Ms Ghose** elaborated IoT drivers and how these connect and monitor the environment (unlike smart city, digital farming, and Digi System); and produce end-to-end close loop monitoring system.

ICDL 2016 @ SOCIAL MEDIA



Maria Gäde: thanks to @teriin for a wonderful experience at #ICDL



Vrushali Dandawate: @teriin #ICDL 2016 Public librarian there is need to become more smart and active in today's world. Need more funds from government



Samuel Abraham: @Krishna2581 excellent talk at @teriin #ICDL #icdl2016 Even the legendary Dr. Kiran Karnik shared about CroPln's success.



Adam Koszary: #ICDL comes to a close. Delhi, you've been amazing, and thanks @inBritish for the opportunity!



Vishal Ahuja: #icdl2016 great learning, opportunity to meet amazing people

SPECIAL SESSION 6A-7A

TRANSFORMATION IN PUBLIC LIBRARIES

Welcome Address: Dr Shubhangi Sharma, Executive Director, IPLM Secretariat, NASSCOM Foundation

Speakers: Dr B Shadrach, Advisor, Indian Public Library Movement; Ms Donna Scheeder, President, IFLA

PANEL DISCUSSION 1: PUBLIC LIBRARY: A PLATFORM FOR KNOWLEDGE AND COMMUNITY SERVICE

Moderator: Dr Usha Mujoo Munshi, Librarian, Indian Institute of Public Administration, India

Panelists: Dr Surinder Kumar, Senior Technical Director, Digital Archiving and Management Group, National Informatics Centre, India; Mr Himanshu Giri, COO, Pratham Books, India; Ms Liby Johnson, Entrepreneur Expert, United Nation Development Program; Mr Rajiv Mishra, Founder and Managing Director, Total Library Solutions, India; Dr M Naina Rani, National Consultant-PPTCT, World Health Organization

PANEL DISCUSSION 2: ROLE OF LIBRARIANS BEYOND LIBRARIES: WAY FORWARD

Moderator: Dr Jagtar Singh, Professor and Head, Department of Library and Information Science, Punjabi University, Patiala, India

Panelists: Public librarians from partner states

Speakers: Ms Neeza Singh, INELI Innovator, Chandigarh, India; Ms Shobana, INELI Innovator, Kerala, India; Mr Mudassira Ashraf, Librarian, District Library Anantnag, Jammu & Kashmir, India; Dr Mukhtar ul Aziz, Director, Libraries and Research, Jammu and Kashmir Government, India; Ms Kalpana Dasgupta, Advisory Board Member at READ Global, Former Director, Central Secretariat Library, Government of India; Ms Sudha Mukherjee, Public Information Officer, Delhi Public Library, India

Vote of Thanks: Mr P Jayarajan, Library Advisor and Chairman, Indian Public Library Advisory Board, Thunchath Ezhuthachan Malayalam University

In this session, **Dr Sharma** described the Indian Public Libraries Movement (IPLM) and its reach across along with the current challenges. **Dr Sinha** spoke about the NITI Aayog and the Right of Persons with Disabilities Bill, 2014, as well as the infrastructure of public libraries in India. **Mr Shadrach** defined decentralization, idea of similarization, and interconnection, as the three features of IPLM. **Ms Scheeder** spoke about how libraries and librarians can change life. She explained about barriers regarding Infrastructure, gender gap, affordability, and awareness. She also spoke about general trends in public libraries' transformation and tools & techniques for libraries.



SPECIAL SESSION 7B

PANEL DISCUSSION: DIGITIZATION & ECONOMIC DEVELOPMENT

Chair: Mr Prabir Sengupta, Distinguished Fellow and Director-TERI LIC, New Delhi, India

Panelists: Dr Rajat Kathuria, Director, ICRIER, New Delhi; Mr Kiran Karnik, Chair, Oxfam India; Chairman, Indraprastha Institute of Information Technology; President, IHC, India; Prof. Biswajit Dhar, Professor, Centre for Economic Studies and Planning School of Social Sciences, JNU, India

PANEL DISCUSSION: DISCUSSION PANEL: CAPACITY BUILDING INITIATIVES IN E-GOVERNANCE

Chair: Dr Ashwini Kumar Sharma, Director General, NIELIT

Panelists: Dr Lovneesh Chanana, Vice President - Government Relations, SAP India; Prof. Charru Malhotra, IIPA, India; Dr Piyush Gupta, NISG

Countries with advanced levels of digitization have realized significant economic, social, and political benefits. **Prof. Dhar** emphasized the same saying that digitization is pathway to economic growth. **Mr Sengupta** stated that there will always be effects of digitization on economy. He also said that it will either provide 'demographic dividend' or have 'demographic disaster'. **Mr Karnik** said, "It is time we head from highways to i-ways." **Dr Kathuria** listed some of the side-effects of digitization, such as job risk, regulatory risk, cyber risk, etc.

In the Panel Discussion, all panelists insisted upon role of corporates in training towards capacity building initiatives for e-governance. They also emphasized on introduction of ERP system in any media of work.



AWARDS

ANNOUNCEMENT OF BEST PAPER AWARD

Best Paper Award



ANNOUNCEMENT OF BEST POSTER AWARD

Best Poster Award



EXHIBITIONS



WORKSHOPS @ DAY 4

The workshops on Day 4 discussed the relationships between social media and knowledge. **Dr Shantanu Ganguly** talked about digital marketing by using social media and said that it is the best communication model for smart future. **Mr Sameep Mehta** talked about social mining and social data.

Mr Jitendra Wase discussed how small bytes or texts are being used to capture knowledge through social media. **Ms Meeta Sengupta** explained that the world of linear presentations is gone and now we are into multilayer social PPTs. **Mr Danish Contractor** talked about content management and education that has now become personalized through digitized resources. **Mr Vivek Singh** discussed the importance of social networks and how social network can be used by organizations.



Mr Sheshadri Chatterjee described service of CRM strategy (CRMS), change management process, user experience of CRMS, etc. **Mr Prateek Shah** discussed digital marketing vis-à-vis content, cost, image processing, and so on. **Mr Vinkal Chaddha** talked about knowledge management industry and importance of KPMG.



IN CONVERSATION



MR DANISH CONTRACTOR

IBM INDIA PVT. LTD

Your thoughts on the analytics learning content in management libraries?

Analytics for learning content management is growing and has a far deeper impact in the education sector. It helps us to deliver the right information at right time to right user. The indexing mechanism using analytics semantics is much more powerful than ever before.

What are your views on text mining and allied technologies?

The technology is superb in identifying relevant content. Text mining is not just clustering of contents, although it provides more meaningful results to users.



MR TOM DERRICK

THE BRITISH LIBRARY, UK

What you suggest about the reuse of cultural heritage datasets?

We must make datasets reusable while converting the cultural heritage resources in digital format as these gives the users freedom to interact with cultural heritage resources. At the British Council we have made the dataset reusable under the creative common license to make these resources interactive.

Which technique have you been following to conserve print documents?

We ensure the print resources are being handled carefully. We also keep these in humidity-controlled environment. In addition, numbers of conservation techniques have been used to preserve these resources.



MS AMARJEET KAUR GILL

SINGAPORE

What is the scenario of library science education in Singapore?

Singapore offers part-time masters degree courses in library science. Meritorious students could be sponsored for performing well but for further studies or research, they have to go overseas.

How should India move ahead in this direction?

The first stepping stone is capacity building. Therefore, skills enhancement programmes should be conducted.

EXHIBITOR FEEDBACK

MR VINAY SOOD, OXFORD ONLINE JOURNALS

"We have received an overwhelming response. I am a regular participant at ICDL. Massive attendance of foreigners and Indian delegates is its USP which is increasing year to year."

MEDIA COVERAGE

Business Standard

Digital knowledge management systems must be collaborative and focus on users!

15 December 2016

The second day of the fifth edition at the International Conference on Digital Libraries (ICDL), organised here by The Energy and Resources Institute (TERI), placed the focus on the need to create knowledge management systems that are defined by users and very collaborative to ensure that a truly 'smart future' becomes a reality.

Moderated by Dr Shantanu Ganguly, Fellow, Knowledge Management Division at TERI, the day's key session, aptly themed 'Knowledge Management in an era of Digital Transformation', discussed the crucial challenge of providing an organizational structure and vision while promoting innovation in the new knowledge economy.

Speaking about the recent trends in the deployment of an effective KM system, Ganguly placed emphasis Machine Learning, Cognitive Learning and Natural Language Processing, Social Media Platforms with special reference to Intra-organisational group meetings, among other things, adding that Analytical tools were coming into force to measure the vast amounts of data being generated today.

Dr Ganesh Natarajan, Chairman of NASSCOM Foundation and Global Talent Track, while emphasizing that knowledge management was a continuous journey, said, "Simplifying the user experience is the key. Knowledge management can be successful only if one first creates the 'culture' or aspiration, develops the process, and then provides technology and leadership."

Kavi Mahesh, Director and Dean of Research at KAnOE, said, "Knowledge management systems must be collaborative, user defined and 'ad-hoc'. Although it is the de facto encyclopaedia of information, the Internet was seen as more keyword heavy instead of being contextual and relevant to a particular engagement. It must be noted that knowledge management systems can make the right information available in the right context and at the right time and they are about enabling the creation, sharing, searching and application of knowledge."

With much of all human knowledge today being stored away in centralised databases, the world has moved closer towards a 'knowledge-based' future, one where the ability to access and understand everything that is stored away is increasingly becoming the most important challenge. It is within this context that knowledge management must be understood and how it really aims to enhance the quality and productivity of the rapidly growing tribe of 'knowledge workers' across the world.

A total of 120 speakers from 22 countries will be participating in more than 30 sessions during the summit. The conference will witness a vibrant mix of academic papers, practitioner presentations, seminars, keynotes, discussions, workshops, and exhibitions by national and international conference delegates on a range of themes and subjects like innovation and knowledge management, social media and analytics, Big Data, analytics and artificial intelligence, new digital technologies like cloud computing and the Internet of Things, among others.

Five billion more people are set to join the virtual world. Digital connectivity will expand very rapidly and will usher in gains in productivity, health, education, quality of life, and economic progress, among others. In this context, organisations today must be agile and adaptive to be able to easily connect, transfer and share knowledge, deal with big data sets and, finally, find innovative ways to engage with their communities to achieve desirable and sustainable socio-economic outcomes.

ANI

Asian News International

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News Now

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Digital conference

14 December 2016

The Energy and Resources Institute (TERI), as part of its ongoing endeavours to create a better world for future generations through the adoption of new digital technologies, is hosting the 5th edition of the International Conference on Digital Libraries (ICDL) 2016 in Delhi. Initiated in 2004, the conference focuses on promoting innovation in digital and knowledge-driven services and solutions, which help in identifying and preparing for the challenges of a smart future.

The conference this year is called “ICDL 2016: Smart Future—Knowledge Trends that will Change the World” and focuses on understanding, visualising, and exploring the possible scenarios of the future, today so that we are able to prepare ourselves better. It will not only create a roadmap to guide us through what is coming next, but also tell us how to prepare ourselves for new challenges and opportunities. It will suggest how to manage the key trends to improve our life in future.

The conference will host thematic workshops on subjects like innovation and knowledge management, social media and analytics, Big Data and analytics, all complemented by a range of panel discussions, discussion papers and poster presentations.

Some key dignitaries who are expected to speak at the event are Mr Amitabh Kant, CEO, NITI Aayog, Government of India; Donna Scheeder, IFLA, Deputy Chief Information Officer, Congressional Research Service, Library of Congress, Washington, USA; Ganesh Natarajan, Founder, 5F World; Chairman, NASSCOM Foundation & Global Talent Track; Mr Shrikant Sinha, CEO, NASSCOM President - HBS Club of India, India. A total of 120 speakers from 20 countries will be participating in more than 30 sessions during the four-day digital summit.

This conference will help audiences understand and relate to the on-going developments in digital technologies and their correlation to India’s economic development, and how they can impact our efforts for a cleaner planet within the larger effort to ensure equitable socio-economic growth in India. The discussions will help predict the future challenges and prepare for it, and take requisite actions based on this knowledge to create the future, which are the three objectives of “Smart Future”. Having the strategic knowledge about the key trends that will shape our future will enable us to create or discover something with the potential to touch millions of lives.

Download the ICDL mobile app from Play Store to remain updated on the conference details.

TERI digital libraries conference opens with 'knowledge' roadmap for Smart Future

14 December 2016

The Energy and Resources Institute (TERI) inaugurated the fifth edition of the International Conference on Digital Libraries (ICDL) 2016 in New Delhi, today.

The theme of ICDL 2016 is Smart Future-Knowledge Trends that will Change the World.

The four-day conference is a part of TERI's on-going efforts to create a better world for future generations through the adoption of new digital technologies.

ICDL 2016 will not only create a roadmap for a smart future, but it will also try to tell us how to prepare ourselves for new challenges and opportunities in this transformative digital age.

The three strategic objectives of the conference, include predicting the future, preparing for the future and, finally, taking requisite actions to apply this knowledge to create, what is being called the 'Smart Future'.

With five billion more people set to join the virtual world, digital connectivity is set to expand further and very rapidly.

With this, it will usher gains in productivity, health, education, quality of life, and economic productivity, among others.

In this context, organisations today must be agile and adaptive to be able to easily connect, transfer and share knowledge, deal with big data sets and, finally, find innovative ways to engage with their communities to achieve desirable and sustainable socio-economic outcomes.

Ajay Mathur, Director-General, TERI, while underscoring the importance of national approaches to managing knowledge, especially through the adoption of new digital technologies in this digital era, said: "The core objective of the International Conference on Digital Libraries (ICDL) 2016 conference is to discuss perspectives on how planning for smart cities and other important aspects of our emerging urban lives must factor in the increasingly crucial role played by sophisticated and appropriate ICT tools and software services to intelligently manage, analyse and predict, how our smart future could look like. This will ensure how countries and their institutions plan and build entirely new ecosystems in areas such as public security, air quality and pollution, public health environmental sustainability, socioeconomic innovation, participatory governance, better public services, planning and collaborative decision-making."

This year the conference is being graced by dignitaries from India and abroad, notably by Ms Donna Scheeder, IFLA President & Deputy Chief Information Officer, Congressional Research Service, Library of Congress, USA. P K Bhattacharya, Fellow and Area Convenor also delivered the vote of thanks during the inauguration.

A total of 120 speakers from 22 countries will be participating in more than 30 sessions during the summit.

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‘Digital technology must for sustainable socio-economic outcomes’

14 December 2017

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The fifth edition of the four-day International Conference on Digital Libraries (ICDL) 2016 that started on Tuesday is aimed at creating a roadmap for a “smart future” and also outline how to prepare ourselves for new challenges and opportunities in this transformative digital age.

“There is a need to bridge the digital knowledge gap across the globe. This can also help in achieving the goal of eradicating poverty,” said Donna Scheeder, President of International Federation of Library Associations and Institutions (IFLA) & Deputy Chief Information Officer of Congressional Research Service, Library of Congress, US.

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“This will ensure how countries and their institutions plan and build entirely new ecosystems in areas such as public security, air quality and pollution, public health environmental sustainability, socioeconomic innovation, participatory governance, better public services, planning and collaborative decision-making,” Mathur pointed out.

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THE ECONOMIC TIMES

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The first ICDL was inaugurated by late Dr APJ Abdul Kalam, the then President of India.

The Energy and Resources Institute (TERI) is an independent, not-for-profit, research institute focused on energy, environment, and sustainable development.

ANI

Asian News International

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Digital knowledge management systems must be collaborative and focus on users!

14 December 2016

The second day of the fifth edition at the International Conference on Digital Libraries (ICDL), organised here by The Energy and Resources Institute (TERI), placed the focus on the need to create knowledge management systems that are defined by users and very collaborative to ensure that a truly 'smart future' becomes a reality.

Moderated by Dr Shantanu Ganguly, Fellow, Knowledge Management Division at TERI, the day's key session, aptly themed 'Knowledge Management in an era of Digital Transformation', discussed the crucial challenge of providing an organizational structure and vision while promoting innovation in the new knowledge economy.

Speaking about the recent trends in the deployment of an effective KM system, Ganguly placed emphasis Machine Learning, Cognitive Learning and Natural Language Processing, Social Media Platforms with special reference to Intra-organisational group meetings, among other things, adding that Analytical tools were coming into force to measure the vast amounts of data being generated today.

Dr Ganesh Natarajan, Chairman of NASSCOM Foundation and Global Talent Track, while emphasizing that knowledge management was a continuous journey, said, "Simplifying the user experience is the key. Knowledge management can be successful only if one first creates the 'culture' or aspiration, develops the process, and then provides technology and leadership."

Kavi Mahesh, Director and Dean of Research at KAnOE, said, "Knowledge management systems must be collaborative, user defined and 'ad-hoc'. Although it is the de facto encyclopaedia of information, the Internet was seen as more keyword heavy instead of being contextual and relevant to a particular engagement. It must be noted that knowledge management systems can make the right information available in the right context and at the right time and they are about enabling the creation, sharing, searching and application of knowledge."

With much of all human knowledge today being stored away in centralised databases, the world has moved closer towards a 'knowledge-based' future, one where the ability to access and understand everything that is stored away is increasingly becoming the most important challenge. It is within this context that knowledge management must be understood and how it really aims to enhance the quality and productivity of the rapidly growing tribe of 'knowledge workers' across the world.

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india today

International Conference on Digital Libraries

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Business Standard

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Digital Vidya is Speaking On Smart Future at ICDL 2016

9 December 2016

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Share the post "Digital Vidya is Speaking On Smart Future at ICDL 2016"

The much awaited ICDL 2016 mega event is here!

Digital development has gone so far to simplify the processes of our lives. For instance, ordering pizza or asking to unlock your home lock through a click or voice command. Undoubtedly, smart future is near.

But what is smart future?

It is understanding, visualizing, and exploring the possible trends of the future today. This will help in designing the future on the basis of set goals. Since digitization is growing too fast and the society today is a knowledge-driven society. Therefore, it is even more important to know the possibilities for future development. With this aim, ICDL 2016 conference is taking place at Delhi.

What is ICDL 2016 Conference?

The main objective of this conference is to enlighten people about possible future trends in order to manage present risks and convert challenges into opportunities.

Theme of ICDL Conference 2016

- This will help to create a roadmap to guide people through what is going to come next.
- This conference will help you prepare yourself for new risks and opportunities.

Smart Future: Knowledge Trends that will Change the World

Why Should I attend: Objective of ICDL Conference 2016

- Reducing the gap in the digital industry via collaboration.
- Creating frameworks for futuristic digital strategies.
- Strengthen smart skills to implement in a digital library environment.
- Formulating recommendations on innovation, digitization, and management of technologies and policies.
- You will witness more than 100 globally eminent international speakers who will share their views.
- You will be to enhance your knowledge on new information products on display at the international exhibition.

Who Should Attend?

- Publishers and Vendors
- Corporates
- Researchers
- Data Scientists
- Academicians and Students

- Information and Knowledge professionals

Events at ICDL 2016

There will be thematic sessions, workshops, and special events to help attendees explore the digital world in a better way.

The conference will stretch for 4 days whereas workshops will last for 3 days. This mega event will happen from 13-16 December 2016.

Special Session: Smart Ways to Publishing and Digital Marketing

Among topics like Collaborative Knowledge Creation Crowdsourcing; Digital Curation & Preservation of Indigenous Knowledge; Information discovery using search by image; Digital Library development, architecture, management; Digital Literacy: Standards and Policy, there will be a panel discussion on ‘Smart Ways to Publishing and Digital Marketing’.

In 2016, the average firm allocated 30% of their marketing budget to digital platforms, this rate is expected to grow to 35% by 2019. Therefore, there is no denying the fact that digital marketing is a booming industry and will continue to grow.

This session will explore different perspectives on digital marketing including corporate and academic scenarios. You will learn about innovative approaches to customer engagements via web and social media platforms.

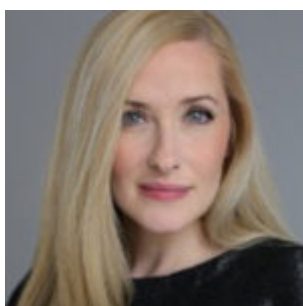
Herein, Mr. Pradeep Chopra, CEO, Digital Vidya will be one of the panelists. Other panelists for this special event will be Adam Koszary, Project Officer, The Museum of English Rural Life & Communications and Social Media Officer, Bodleian Libraries, UK; Seshadri Chatterjee, Asia Pacific Business Programme Manager, Microsoft Corporation; Dinesh K. Gupta, Prof & Head, and Director Research, Varthaman Mahaveer Open University, Kota, India.



Pradeep Chopra



Dinesh K Gupta



Heather Devereaux



Adam Koszary

The lead speaker will be Lead Speaker: Heather Devereaux, Sr. Director of Customer Engagement – Marketing, R&D Solutions, Elsevier, The Netherlands and the session will be chaired by Chair: L Subramaniam, CEO, Trivone & Former Editor, Data Quest.

The venue for this special event is Silver Oak, India Habitat Centre.

Workshop at ICDL 2016

The 3-day workshop will witness topics like ‘Innovation and Knowledge Management’, ‘Big Data and Analytics’, and ‘Social Media and Analytics’.

On day 3, one of the most debated topics, ‘Digital Marketing Trends to look forward to in 2017’ will be taken by Mr. Prateek Shah, Founder, Digital Defynd who will share his views and experience of Digital Marketing industry and the possible trends that will shape the year 2017.

Where Can I Attend ICDL 2016?

You can attend this 4-day event at India Habitat Centre, New Delhi, India. The much-awaited event organized by TERI will be huge. [Register](#) yourself to experience this mega event!

POST CONFERENCE FEEDBACK

The event was very successful and many thanks for hosting us for four days. I must say that the event was flawless and very well organised. Congratulations to you and to your entire team. We look forward to being part of next ICDL Kumbh Mela of Librarians!

Mr Kailash Balani
Managing Director
Aditya Books Pvt. Ltd and Balani Infotech, India



I would like to congratulate you for successfully organising ICDL conference.

Dr Sangeeta Kaul
Network Manager, DELNET, India



Thanks for giving me the opportunity to speak at ICDL 2016. I was a great opportunity for me and I cherished every moment of it.

Dr Kalyan Bhattacharjee
Deputy Registrar
IIT Delhi, India



Greetings of the Day!

On behalf of my team, I would like to take this opportunity to thank you for the cooperation and support extended to us during your 4 days ICDL event "Smart Future: Knowledge Trends that will Change the World" from IHC, Lodhi Road, New Delhi.

It was indeed a pleasure interacting with you.

Mr H.S.Manola
24 Frames Digital, India

Please accept my hearty wishes for the very successful organization of the ICDL 5th Edition. You both and your team deserve all the appreciations for such a wonderful gathering from the whole globe.

Dr Nabi Hasan
University Librarian
Aligarh Muslim University, India



Congratulations for making this ICDL 2016 a grand success, Good Job Done!!!

Thank you for the hospitality and arrangement it was in fact a Grand and successful ICDL 2016 event.

Mr Bijoy Ketan Panda
Information Resource Centre, Tata Consultancy Services,
India

Thanking you for the fine organization of ICDL2016. It was nice to be part of this wonderful mix of experts, librarians and attendees.

Mr Patrick Vanden Berghe
Bibliothecaris, Belgium

I wanted to express my gratitude for your excellent hospitality over the course of the past week. I enjoyed the conference enormously which has given me the opportunity to embark on what I am sure will be many fruitful relationships.

It was a pleasure to meet you all and I do hope we can continue to correspond with one another.

Mr Tom Derrick
Digital Curator, The British Library, UK



Thanks again and congratulations on the successful organization of such a large conference.

Dr. Lovneesh Chanana
Vice President (Government Relations)
SAP India Pvt Ltd., India



Writing from my office in the British Library, I wish to thank you and all your colleagues and all the volunteers for a highly successful conference. I learnt a lot and enjoyed it at the same time and have not quite recovered yet from the very full-on experience.

I also enjoyed the opportunity to understand better the environment in which our colleagues in India work. And of course the great thing about a real physical conference is meeting lots of interesting people.

Dr Kristian Jensen R
Head of Collections and Curation
The British Library



Thank you for giving us and SAP the opportunity to be a part of this event. We look forward to continuing to engage with you on the strategic topics of Big Data Analytics, Industry 4.0 and IoT, and E-Governance.

Ms Sudakshina Ghosh
Industry Lead – Discrete Manufacturing
SAP India



Thanks for your nice hospitality. I found the workshop very much informative. In fact, I am planning to move towards a new direction of research after attending some of the lectures.

Hope to see you in the near future also.

Dr Dhruba Kr Bhattacharyya
Dean, Academic Affairs, and Professor, Department of
Computer Science and Engineering
Tezpur University, India



Thanks a lot for inviting me to ICDL. I enjoyed the sessions thoroughly. It was one the best conference that was organised most professionally. Congratulations to the Team ICDL.

Dr. Jagdish Arora
Director
INFLIBNET Centre, India

