

ICDL 2019

International Conference on Digital Landscape

DIGITAL TRANSFORMATION FOR AN AGILE ENVIRONMENT

November 6–8, 2019 | IHC, New Delhi, India



#ICDL 2019 | #Act Digitally

CONFERENCE BULLETIN | DAY 2

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INAUGURAL SESSION

SMART WATER MANAGEMENT: DEVELOPING WATER-WISE CITIES

Chair: S Mohan, International Water Association India (IWA)

Co-Chair: Anshuman, Associate Director, Water Resources Division, TERI

Inaugural Address: S K Sarkar, Senior Director, TERI; Bharat Lal, Additional Secretary (Water), Department of Drinking Water and Sanitation, Ministry of Jal Shakti, GoI

Panelists: A K Gosain, Professor, Department of Civil Engineering, IIT Delhi; B Manojkumar, Director Sales, Smart Energy Water; Rakesh Pandey, Director – Technology, Gen X Info Technologies Pvt. Ltd

The inaugural session began with a welcome address by **S K Sarkar**. He expressed his concerns on water stresses and challenges, such as, declining per capital water availability, and water quality. He shared TERI's experience in documenting and innovating indigenous and smart tools, and solutions for water conservation, quality enrichment, and other areas of water management. **Bharat Lal** spoke on Digitization of Water and the interventions of the Ministry of Jal Shakti in this area.

The session on Digitization for Water-Wise Cities, chaired by **Prof. S Mohan** of IWA, India. He pointed out three key things for achieving water-wise cities, namely, smart by design, smart use, and smart control. **Prof. A K Gosain** spoke on the making of NCT of Delhi as a water-wise city through digitization that leads to equitable and effective management of water resources across the city. **Rakesh Pandey** and **B Manojkumar** demonstrated different smart tools and applications used by their respective companies.



PANEL DISCUSSION

DIGITAL WATER FROM CATCHMENT TO CONSUMER

Chair: S K Sarkar, Senior Director, TERI

Co-Chair: B Sakhthivel, GeoKno

Speakers: Markus Lade, Global Head, Engineering, Siemens AG; Sandeep Mahajan, Head, GIS & IoT, Suez India; J Venkatesh, Head Water Management, Larsen & Toubro Limited;

Markus Lade spoke on driving the digital enterprise in water industry, where he introduced Siemen's digital solutions. He further focused on real-time detection of water losses and their optimized solutions with the help of Artificial

Intelligence. **J Venkatesh** of L&T Limited spoke on the use of smart technologies in reduction of water losses. He also demonstrated evolution of different applications for water loss management used by their clients. **Sandeep Mahajan** of Suez India talked about GIS and IOT applications, and **Sumit Goel** introduced the concept of river basin monitoring solutions provided by his company across India.

SESSION 1

LEVERAGING AI FOR EDUCATION 4.0

Chair: Jagdish Arora, Advisor, NBA

Keynote Address: P P Das, Professor, Department of Computer Science and Engineering; Head, Rajendra Mishra School of Engineering Entrepreneurship, and Joint Principal Investigator, National Digital Library of India Project, Indian Institute of Technology Kharagpur

Panelists: Uma Kanjilal, Director, Centre for Online Education (COE) and Professor, Faculty of Library and Information Science, IGNOU; Mangala Sunder Krishnan, Professor and Head, Department of Chemistry National Web Courses Coordinator, NPTEL Project (2003-2015), MHRD, Govt of India; Sonia Barbosa, Manager, Data Curation, Harvard University, US; Sudip Sanyal, Director, Faculty of Computer Science and Engineering, BML Munjal University, Haryana

Experts from major digital library projects presented their vision of Artificial Intelligence's (AI) role in building digital libraries and enabling Education 4.0.

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P P Das mentioned how the amount of online material is exploding, and the infrastructure for locating and accessing material is improving daily. AI has a massive role to play in the context of digital transformation services, facilitation of semantic search, surrogate content creation, etc, he said. He further shared information about AI-based mega projects of National Digital Library (NDL). **Uma Kanjilal** talked about the usefulness of APIs like Tin CAN as effective tools for data capture, analysis and visualization. **Mangala Sunder Krishnan** focused on content creation in an organised way in sync with the National Curriculum Board's guidelines. **Sonia Barbosa** discussed how Dataverse project is an open source web application to share, preserve, cite, explore and analyze research data. This free tool offers self-certified data sharing, personalized data space, data management and many more services free of cost. While discussing about limitation of existing online evaluation methods, **Sudip Sanyal** focused on the need for expanding evaluation methods beyond MCQ-based models.

SESSION 2

CYBER SECURITY & CONSUMER IMPACT: EMERGING ISSUES

Chair: **Nandita Baruah**, Country Representative, The Asia Foundation, India

Keynote Speaker: **Neeta Verma**, Director General, National Informatics Centre

Panelists: **Somnath Banerjee**, Country Manager Technology Enablement Professional Services, South Asia, McAfee; **Michael Seadle**, Director, Humboldt Universitat zu Berlin, Germany and Chair, ICDL 2019 Programme Committee



Nandita Baruah talked about cyber security and effective use of digital spaces in today's world. She emphasized on responsible internet use, ethical hacking, and other cyber security-related issues. **Neeta Verma** said how technology is influencing our lives and added that the frequency of instances of cyber crime is increasing by the day. It is important to have stringent cyber security policies, she argued. She further informed the audience that all applications are audited before configuring in the NIC data centre. She advised that data centres should have adequate security measures, and covered important points including phishing and zero-day attacks, and endorsed the inclusion of cyber security education

in school curriculum. **Prof. Seadle** explained why IP networks should be robust for network security. He said, the operating system of Apple is more robust system than Microsoft OS. He also said that on the web, different types of research data are available in the public domain, which can be manipulated by others. **Somnath Banerjee** covered some key points about cyber threat landscape especially Cyberwarfare, Cyber Espionage, and Cyber Terrorism. He also said that 23% of the population is not sure where their data is going. Smart devices can be hacked through laser beams, he explained, and added, "Your phone is watching."

SESSION 3

DIGITAL RIGHTS: WAY FORWARD

Chair: **Somen Chakraborty**, Director, SDPA

Co-Chair: **Pravin Choudhary**, General Manager, DLF, India

Invited Talk: **Michael Seadle**, Director, Humboldt Universitat zu Berlin, Germany

Panelists: **Priya Rai**, Librarian, National Law University, Delhi; **Gurujit Singh**, Associate Professor, Dept of Law, Delhi University; **N Manik**, Manager (Library)

Somen Chakraborty introduced digital rights management as a means to regulate the usage of materials in digital format. He also mentioned the obstacles in monitoring digital materials, and about the lack of awareness and paucity of technological infrastructure. **Michael Seadle** discussed the consequences of misleading information. **Pravin Choudhary** listed the advantage of technological advancement in expediting the access of digital content. **Priya Rai** discussed about DRM process and DRM. **Gurujit Singh** spoke on legal issues in the application of DRM in Indian scenario, privacy issue, consumer protection, data protection, price discrimination and fair dealing. **N Manik** elaborated on the copyright compliance in pharmaceutical industries and usage of scientific information through databases.

WORKSHOPS ENGAGE DELEGATES

ON ADDRESSING SDGs THROUGH DATA ANALYTICS AND AI

Chair: **Vrunda Bansode**, Head, India Data Insights, Sattva Consulting

Co-Chair: **Raj Kumar Bhardwaj**, Librarian, St Stephen's College

Speakers: **Desiraju Padma**, Scientist G, Centre for Artificial Intelligence and Robotics, DRDO, Govt of India; **Atsuyuki Morishima**, Faculty of Library, Information and Media Science, Centre for Artificial Intelligence Research, University of Tsukuba, Japan; **Sudip Sanyal**, Director, Faculty of Computer Science and Engineering, BML Munjal University, Haryana; **Prakash Ambwani**, Head, Engineering-Smart Mechanics and Robotics Lab, Tata Consultancy Services

Vrunda Bansode initiated the workshop with some remarks about SDGs through data analytics and AI. **Prakash Ambwani** covered key information points about robotics. He observed that AI and ML will take the robotics to the new heights. **Prof. Sudip Sanyal** said that machine learning helps to take optimal decisions in achieving SDGs and predicting in the areas of stock markets, agriculture, water, irrigation and house prices. **Prof. Atsuyuki Morishima** talked about crowdsourcing in detail. He said that task assignment to AI is not easy and requires skills. **Desiraju Padma** spoke on the role AI and data analytics play in achieving SDGs including image and wide analytics, smart sensor data analytics, expert

SESSION 4

TRANSFORMING CONTENT LANDSCAPE: GOING DIGITAL

Keynote Address: **F Sheheryar**, CEO, Prasar Bharati, Govt of India

Speakers: **Mayank Agarwal**, DG (N & CA); **Ira Joshi**, DG, NSD, Changing Environment of News; **R A Warsi**, DDG, PB Archive, Digital Content Management and Future

Moderator: **Samir Kumar**, Head, PBNS; **P K Subhash**, ADG (P)-Directorate; **RA Warsi**, DDG (Archive); **Amlan Jyoti Majumdar**, Director (ESD); **V Sivakumar**, ADP (AIR, Sports)

Content market is on the move as the availability of digital content and 'on demand content' service has already brought disruption. In his keynote address, **F Sheheryar** discussed the emergence of technologies and business models that disrupt conventional radio and TV broadcasting systems with respect to content transformation trend from linear to digital. He identified the emergence of broadband and DTH services, commercialization of multiple broadcasting platforms like Netflix, Amazon, Hotstar, Youtube, etc., offering 'content on demand' service any time and in any device. **Mayank Agarwal** explained how Doordarshan evolved with respect to creation of market-driven digital content to engage viewers. **Ira Joshi** explained how traditional and new media can complement each other, if used wisely. She also shared the journey of All India Radio with respect to linear to non-linear content transformation trend. **R A Warsi** talked about digital content management processes and indicated the importance of media asset management and easy-to-apply searching and identification parameters for quick content retrieval. Speaking on Content Monetization and Syndication, **Samir Kumar** suggested ideas for leveraging appropriating possibilities of additional revenue generation through digital transformation under the purview of RTI.



system, and real time analytics of data. She also talked about use of sensors to minimize the use of water and energy.

SESSION 5

MULTI-LINGUALITY AND INTEROPERABILITY: NEW AVENUES

Chair: Ratna Sanyal, Professor, BML Munjal University, Manesar, Haryana

Co-Chair: Md Nasiruddin Mitul, Professor and Dean-Academics, National University, Bangladesh

Speakers: J.P. Agrawal, Joint Secretary, Dept of Official Language, Ministry of Home Affairs, Govt of India (Invited); V N Shukla, Director (Technical), Election Commission of India; Seema Shukla, JSS Academy of Technical Education, New Delhi; Atul Mishra, Assistant Professor, BML Munjal University, Manesar, Haryana; Satyabrata Acharya, National Digital Library of India, Indian Institute of Technology, Kharagpur

J P Agrawal spoke about the use and evolution of Hindi language in India as well as in the world. He emphasized on promoting the usage of Hindi for official as well personal use also as Hindi is our "Rajbhasha". Both **Seema Shukla** and **V N Shukla** expressed their views about the framework for accessing multimodal, multilingual digital library. They proposed a framework for developing multimodal, multilingual digital library and also covered the different issues related with multimodal, multilingual digital library. **Atul Mishra** spoke about the dictionary of multiword expression in a multilingual content. He



discussed the issues related to multilingual dictionary such as language translation, funding, collaboration, content (selection), copyright, preservation, etc. **Satyabrata Acharya** emphasized on preserving endangered Munda language in Digital library.

SESSION 6

E-LEARNING AND MOOCS

Chair: R K Chaddha, Former Additional Secretary, Gol

Co-Chair: K P Singh, Associate Professor, Department of Library and Information Science, Delhi University

Invited Talk: Aditi Gupta, Engineering and Science Librarian, University of Victoria, British Columbia, Canada

Guest Speaker: Somnath Mitra, Research Scholar, IIT Delhi and Digital Transformation Advisor

Contributed Speakers: Barnali Roy Choudhury, Department of Library and Information Science, Netaji Subhas Open University, Kolkata; Sangeeta Narang, Librarian Selection Grade, Branch Library, Comprehensive Rural Health Services Project, Centre for Community Medicine, AIIMS, New Delhi; Kavita Chaddha, Faizul Nisha and Sudhanshu Bhushan, DESIDOC: A Systematic Review of Literature on Massive Open Online Courses (MOOCs)

Starting the session **Dr R K Chaddha** observed that the education scenario in India will change within the next 5 years drastically. **Aditi Gupta** talked about digital information literacy framework especially, information literacy and digital literacy. She also touched upon a new term "DIF" (digital information fluency). She also highlighted the aims and objectives of information literacy in-fluency. **Somnath Mitra** presented an overview on e-learning and MOOC 2.0. He estimated that MOOCs will rise from today's 1.5 million to 9.6 million by 2021 in India. He also discussed the education system in India with reference to online education/MOOCs. In the last session, three papers were presented "Reinforcing Health Sciences Librarianship Education in India", "Information Commons", and *DESIDOC: A Systematic Review of Literature on MOOCs*.

THEMATIC SESSIONS

RESEARCH DATA PUBLISHING: GAINING CREDIT FOR MAKING DATA FAIR

Moderator: Naren Agarwal, Editorial Director, Springer Nature

Co-Chair: Tamanna Hossain, Assistant Professor, East West University

Speakers: Sanjeev Goswami, Managing Director, Springer Nature; Samuel Winthrop, Journal Development Manager for Research Data, Springer Nature

Explaining the mission of *Springer Nature*, **Sanjeev Goswami** discussed the open access platform programme for dissemination and sharing research articles, and helping community in open access publishing. **Samuel Winthrop** spoke about quantitative data in the context of data sharing in the public environment. He explained what is FAIR data and how to encourage researchers to share more data. He also focussed on the five essential factors for data sharing.



DIGITAL TRANSFORMATION FOR AGILE ENVIRONMENT

Chair: PK Bhattacharya, Associate Director, TERI

Speakers: Pankaj Bansal, Head, Delivery Center, Tata Consultancy; Matthias Hemmje, Prof. University of Hagen, Germany; Charru Malhotra, Coordinator Centre for e-Governance, Indian Institute of Public Administration; Ashish Pandey, Product Manager, Tata Consultancy; Anshita Arora, Business Analyst, Tata Consultancy

In an engaging discussion, **P K Bhattacharya**, **Pankaj Bansal**, **Matthias Hemmje**, and others talked about the importance of data sharing, governance challenges in data capturing process, and the phenomenon of digital divide. The panelists said that digital adoption is a necessity in the modern world.

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DIGITIZATION: PRESERVER OF INDIGENOUS KNOWLEDGE

Speakers: Spastarlin Nongrem, Secretary, Seng Nongsumar Dawai Khasi Nylla Nogstoin, Meghalaya; V Marak, Tura, West Garo Hills, District, Meghalaya; H C Pakyntein, President, Jantia Indigenous Medicine Association, Jowai Meghalaya; Neitshopeu Thopi, North East Network, Phek Nagaland; Prashanna Gogoi, Ethno Musicologist, Assam

Spastarlin Nongrem talked about traditional medical treatments in the Khasi community. These treatment methods have been continuing since the Mauryan period. V Marak emphasized on the effectiveness of medicinal herbs used for healing. Various illnesses related to kidney malfunction, artificial malignancy, etc., can be cured by medicinal herbs. However, lack of funds is a challenge, he lamented. H C Pakyntein focused on the usage of bark of yellow trees and other traditional methods for curing many diseases. Neitshopeu

Thopi highlighted on the importance of traditional craftsmanship and shared valuable information about women weavers and their role in income generation. Prashanna Gogoi talked about music and melody from the beautiful valley of Assam. Traditional musical instruments, which are prepared using bamboo shoots, stones, buffalo horns, and coconut, are brilliant innovations. The Bihu dhol, for instance, is made from such materials.

GLIMPSES OF ICDL 2019



SESSION 7

OPEN ACCESS MOVEMENT: DISCOVERING NEW AVENUES

Chair: M Aslam Alam, Chariman and Executive, Director, Institute for Information Literacy and Sustainable Development, Bangladesh

Co-Chair: Akash Singh, Deputy Librarian, National Law University, Delhi

Invited Talk: Uma Kanjilal, Director, Centre for Online Education (COE) and Professor, Faculty of Library and Information Science, IGNOU

Guest Speaker: Siva Chidambaram, Chief Librarian, AIIMS, New Delhi

Contributed Speakers: Mohd Nazim and Sana Zia, Vrushali Dandawate, Rajesh Kumar Das, and Rumana Rahman

M Aslam Alam asserted that open access movement yields unrestricted access to resources without financial, legal and technical barriers. **Prof. Uma Kanjilal** started with Rabindranath Tagore's quotation divulging the attributes of knowledge—free, objective, refined, and logical. She elucidated about Open Educational Resources (MERLOT, Khan Academy, ePathshala, NPTEL, SWAYAM, IIT Bombay's Spoken Tutorials) and their significance in reducing the drop-outs in schools due to unaffordability of textbooks. **Siva Chidambaram** rendered a case study of AIIMS Library where he reshaped the medical library services, library work, library space, and library collaboration in networked/ digital environment. **Mohd Nazim** revealed the merits of open access in increasing the reach and visibility of



research and citation impact. **Vrushali Dandawate** explained the mechanism of open access tracking projects that can be effectively executed with tagging. **Rumana Rahman** demonstrated the bibliometric analysis of 10 years of research outputs, published in the spectrum of open access scholarly publishing.

SESSION 8

DATA MINING AND MANAGEMENT

Chair: PP Das, Professor, Dept of Computer Science Engineering, IIT Kharagpur

Co-Chair: Siva Chidambaram, Chief Librarian, AIIMS

Invited Talk: Sonia Barbosa, Manager Harvard University

Contributed Papers: P R Goswami, Arup Kumar Ghosh, Sachin Garg, Tamanna Hossain

Sonia Barbosa described data as entities used as evidence for the purpose of research or scholarship. She also explained how to install Dataverse repository as it is freely available as an open source software. **P R Goswami** spoke about Census of India database as the most important source of information. He also added that LIS professionals working in social science research libraries need to understand the content and structure of this database to better serve their clientele. **Arup Kumar Ghosh** talked about the role of libraries in data management and data Economy. He also discussed the challenges faced by the librarians. **Sachin Garg** explained the behaviour of Indians using Twitter. He informed about the Indian language Twitter tools being used to create Indic tweets, mobile application and its hypothesis, data mining architecture, challenges in mining Twitter, and understanding AI/ML Bias in Twitter. **Tamanna Hossain** focussed on research data management being incredibly important for high quality research and scholarly communication and how librarians are helping researchers address their needs throughout the research data lifecycle.

In a thought-provoking session, **P K Bhattacharya**, Associate Director, TERI, talked about digital transformation for an agile environment. He was joined by **Pankaj Bansal**, Head, Delivery Center, Tata Consultancy Services and **Prof. Matthias Hemmje**.

SESSION 9

REGULATORY REGIME IN SMART AGRICULTURE

Chair: Alok Adholeya, Senior Fellow and Senior Director, Centre for Mycorrhizal Research Sustainable Agriculture Division, TERI

Co-Chair: Amit Kumar Dinda, Professor, Renal and Transplant Pathology, AIIMS

Speakers: Swarup Sarkar, Former Director, Communicable Diseases, WHO; A K Mishra, Principal Scientist and Coordinator (Bioinformatics)

Alok Adholeya welcomed the speakers and reminded all about the country's focus on increasing or doubling farmers' income and other challenges. He spoke about the smart technologies used in improving agricultural productivity, including nanotechnologies. **Prof. Amit Kumar Dinda** spoke on how the developed world adopts personalized medicines and other modern healthcare technologies. **Dr A K Mishra** spoke on ICT-based applications in agriculture and the processes of farm modernization in India. **Dr Swarup Sarkar** talked about how Indian pharmaceutical companies became a pharmacy of the world by supplying low-cost generic medicines. **Dr S P Saini** focused on the country's drug controlling authority that has recently introduced new approaches to handle the drugs and devices manufacturers of the country.

IN CONVERSATION



HAL KIRKWOOD

UNIVERSITY OF OXFORD, UK AND PRESIDENT, SPECIAL LIBRARY ASSOCIATION, USA



How do you feel attending ICDL 2019?

This is an interesting conference which is mix of topics and attends. UN SDGs in this year's theme is a fascinating one. I have been enjoying it thoroughly.



How you foresee the future of library in data landscape environment?

Libraries have been facing external pressure from Google and Amazon etc. Many people want to become librarians but we must value their skill sets too. Libraries must establish partnership and relationship by bridging the divisions.



SONIA BARBOSA

MANAGER OF DATA CURATION, IQSS DATAVERSE HARVARD UNIVERSITY, USA



How India can benefit from RDM practices?

India can take advantage of data management by following the best practices in the field. Harvard University does not have a policy to manage the data of researchers. Nevertheless, researchers submit their data to Dataverse, voluntarily. Library and information science professionals can play a vital role in educating the people about data management and its benefits.



What is your opinion on Indian institutions and professionals?

Indians are technology leaders but I am surprised to find the basic facilities missing such as online timings of buses. LIS professionals can play a major role to educate the people about ethical issues associated with the data.

CORPORATE SPEAK



KAILASH BALANI

M/S BALANI INFOTECH PVT. LTD

During his interaction with the ICDL team, Kailash Balani raised concerns about rising taxation, discounts, and tendering system in the publishing industry and proposed a common platform for publishers and librarians.



SURENDRA SINGH

COUNTRY MANAGER - INDIA i2S S.A

"I have liked the topics covered during the conferences, which have upgraded my knowledge about the world of libraries. I liked the live-streaming of sessions, which is beneficial for those who are unable to attend the conference. These events have been professionally managed by TERI".

DELEGATE SPEAK



SAFURAT BALOGUN

GOETHE-INSTITUT, MAX MUELLER BHAVAN, NEW DELHI

"I like the platform which brings together people from diverse backgrounds. It has been good for networking with people from all parts of world.