

NDL PROJECT — DIVIDEND PAYOUT OF DIGITAL TECHNOLOGY



I attended a workshop on National Digital Library (NDL) at IIT Kharagpur last June. The objective of the NDL project, as I could understand, is to integrate all existing digitized and digital contents of all educational institutes of India and bring them under a single umbrella. This will then allow users like students (of all levels), teachers, researchers, professionals and other lifelong learners access to this portal for their educational needs. Initiated by the Ministry of Human Resource Development (MHRD) of the Govt. of India under its National Mission on Education through Internet and Communication Technology (NMEICT) programme, IIT Kharagpur has been entrusted with the responsibility to set up this National Digital Library towards building a national asset. The pilot project is scheduled to be launched sometime early this year. Considering the importance of the program, a proposal came from IIT Kharagpur to publish a Cover Article on the subject in our esteemed journal. The article has been authored by the persons who are directly involved in the pilot project.

The NDL programme complements well India's education policy to make more people educated. According to the United Nations Educational, Scientific and Cultural Organization (UNESCO) report published last year, India tops the list of countries in the race to reduce dropouts of

school-going children. Globally, just one third of countries have achieved all of the measurable 'Education for All' (EFA) goals set by UNESCO in 2000. Even then India has the highest population of illiterate adults. There is no doubt that a higher literacy rate is the requirement for any country to progress and the government is conscious about it. The Supreme Court, in a ruling in 1993, announced that children have a fundamental right to free education, and thus in the year 2003 the 'Right to Education' policy was incorporated in the Constitution via its 83rd Amendment. In spite of this, the country has not been able to provide free and compulsory education to children up to fourteen years of age till date.

Education has different meanings to different people and is probably one of the most discussed subjects to interpret the real meaning of education. I am not going into that discussion here (in fact I wrote an editorial on education in *Science and Culture* a few years back). However, in its most elementary level, we know that literacy is the first step to education or to be educated. Literacy, conventionally, means the ability to read and write. For the present discussion it may suffice to restrict ourselves to the workable

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meaning of education as has been defined by UNESCO, "Literacy is the ability to identify, understand, interpret, create, communicate and compute using printed and written materials associated with varying contexts. Literacy involves a continuum of learning in enabling individuals to achieve their goals to develop their knowledge and potential and to participate fully in their community and wider society".

Literacy is an evolving process which keeps on adding different parameters with technological developments in a digitized world.

The purpose of NDL is to create a virtual repository of all educational materials which will be available and accessible to all interested persons. The primary focus at this moment is to include all course materials, text books of primary, secondary and higher secondary level for all the boards of education in all languages of medium of instruction. One can get an idea about the magnitude of work from a cursory glance merely at the school level which involves 37 boards of education in the country (according to Wikipedia), plus Central boards of education with English, Hindi and all respective state's official language as the medium of instruction. Similarly to pull all educational materials at college (graduate) and university (post graduate) levels in humanities, commerce, science and engineering, vocational and other courses under a single umbrella is a gigantic task.

One of the major dividends of digital technology is the availability and accessibility of educational resources at any time by *anyone* interested. However, in order to make this available to *all* students and stakeholders, what is needed is the availability and affordability of accessing this repository by all the end users (read students) at all times. Will the government be able to provide free access to all the students irrespective of their financial background? If this is possible then this project will be a boon to the future generations as not a single student will be deprived of getting textbooks or other educational resources owing to financial constraints. Only then will the NDL project be considered a mission, since all missionary activities are non-discriminatory.

Ensuring access to the internet and thereby to this digital repository by one and all at any time remains a challenge from a technological point of view. This will necessitate that all nooks and corners of the country are covered by internet accessibility. Even with the success of

digital technology in these current times, two-thirds of the world's people do not yet have internet accessibility. Technological advances, however, will always be made as long as there is a human endeavor to challenge the impossible and invent a solution to bypass a problem. Google, for example, is leading a project *Loon* which desires to connect people in rural and difficult areas by allowing a bunch of balloons to float 20 kilometers above the earth's surface which will direct wireless signals to places that lack connectivity. The project *Loon* was started in June 2013 in New Zealand as a small pilot to test its success. By partnering with telecommunication companies in sharing cellular spectrum they have enabled people to connect to the balloon network directly from their mobile phones or other LTE (Long-Term Evolution) devices. The signal is then passed across the balloon network and back down to the global Internet on earth. Due to significant improvement in mobile technology in recent years,

smartphones have reached the hands of the common people. Adoption of some of these more sophisticated technologies may extend the reach of these networks further to the remotest corner of the country. NDL may think of creating a dedicated App for students to access this curriculum repository to make their life simpler.

I am happy to announce that IIT Kharagpur has kindly agreed to include all the

issues of *Science and Culture* on their NDL platform, considering the richness and archival value of its contents. This includes contributions from eminent personalities from all walks of life, like Netaji Subhas Chandra Bose, Pt. Jawaharlal Nehru, Meghnad Saha, P.C. Mahalanobis, S.N. Bose, J.B.S. Haldane, U.N. Brahmachari, Sisir Mitra, J.D. Bernal, Radhakumud Mukherjee, P.A. Cerenkov NL, Otto Hahn NL, R.A. Millikan NL, Amartya Sen NL, D.S. Kothari, C.N.R. Rao, M.S. Swaminathan, Uma Dasgupta, Andre Beteille, R.A. Mashelkar and many others. This will not only increase the visibility of the journal, but will also open up the treasures to be viewed by all who are specially interested in the nation's cultural aspects. □

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