OPEN MOVEMENT IN INDIA

(2013-23)
The Idea and Its Expressions

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Open Movement in India (2013-23): The Idea and Its Expressions

Abstract

Open, as an idea, has not received systematic attention in India. In an attempt to provide a survey of the Open projects emerging from the government and non governmental sector in India, this report identifies some broad patterns that have materialized in the Open Movement in the country in the last one decade. The report is based on a reading of the available literature on selected projects and conversations with academicians and advocates of the Open. The rough outline of the Open initiatives is accompanied by reflections on the nature of the Open here and the need to envision it differently from what it currently is.

Introduction

Openness as a philosophy is rooted in the belief that sharing ideas and resources is healthy for the knowledge economy, especially in contemporary times. This sharing does not take anything away from any entity; rather, it enables collaboration and innovation for the larger social good. With the Internet and digital technology, one can see the faster spread of such innovation across the globe while also allowing for plenty of room for its adaptation to regional contexts. Anchored in the thought and efforts of individuals such as Richard Stallman (1992; 2002; 2006; 2009) and Tim Berners-Lee (Berners Lee, 2004; Berners-Lee, Hendler and Lassila, 2001; Berners-Lee et al 1992; Berners-Lee and Tim, 2010; Berners-Lee, Tim and Hendler, 2001; Berners-Lee, Tim and Shadbollt, 2011; Bizer, Heath and Berners-Lee 2011) who take a view contrary to that of keeping public funded research and innovation locked away under copyright and patent laws, the Open Movement originated in the Global North.

In the West, specifically in the USA, with the support from the institutions such as the Hewlett Foundation and the Bill and Melinda Gates Foundation, the manifestation of the Open Movement through the push for OER (Open Educational Resources) translated into a greater uptake from educational institutions such as Rice University and the MIT (through MIT OCW – Open CourseWare)(Bliss and Smith, 2017). With prestigious universities offering MOOCs (massive open online courses) through platforms such as edX

Massive Open Onlice Courses MOOCs

and Coursera, educational resources have come to be seen as a social good: keeping them available for mass access has been an intentional move towards equal access to quality educational materials. In addition to OER, Open Access (the idea that research funded by public funds need to be made available publicly rather than behind a paywall erected by commercial publishers), as an expression of the Open Movement,

has also been present in institutional funding mechanisms in the West, again, especially in the USA. A lot of research emerging out of grants extended to individuals and institutions have space for allocation of funds towards the cost of Open Access publishing for dissemination of results. Several other initiatives such as the Creative Commons, and the Wikimedia Foundation have been working towards making Openness a reality by charting out various projects, pathways, and initiatives to keep knowledge accessible to all for learning as well as collaboration.

In India, the state of the Open Movement is thrown into stark relief by the much longer and much more engaged Western imagination and practice of Openness. Indeed, studying its contours here is equivalent to studying its absences and is therefore very challenging. Here, Open, as an idea, has come via the West and still seems to be struggling to be defined and accepted as an ideal to strive towards. It is an alien concept, deeply misunderstood by the stakeholders who control sharing of knowledge resources: policy makers, legislators, leaders of research and institutions, and researchers and academicians in general.

To suggest another example, a pilot survey of Indian faculty members' attitudes towards use of Open Knowledge sources such as Wikipedia in Indian classrooms reveals that faculty members are very suspicious and skeptical of such sources. They see it as a source of misinformation and therefore, as unreliable.What gets missed is the idea that the content on these sources is not merely for consumption of information and knowledge but are also platforms for knowledge creation and collaboration. In contrast to the two scenarios of OER and Open Access mentioned above, India does not show a long history of organized effort towards making information and knowledge accessible to all, not just through earmarking funds or mechanisms for making publicly funded research available in the public domain via Open Access, but through nurturing a culture of the Open as the default mode of dissemination.

What, then, are we to make of the direction in which the Open Movement is headed in India? Is it possible to shape its trajectory in India? Is it possible to ascertain the ways in which the ideas or benefits of the Open can be made to resonate with the Indian educational and research scenario? Can Indian educators and researchers afford to stay out of the Open ecosystem? What alternative modes of innovation do they champion? These are the questions that this study of the Open Movement in India in the last decade (2013-2023) seeks to explore.

The study is not an exhaustive one: it looks at only some examples that engage with the idea of the Open. The selective nature of the study is informed by two rationales. One, an all-encompassing review would be impossible given the constraints on time and resources: indeed, such a review would be the task of a full-fledged tracking project (which is one of the futures that this report suggests at the end). Two, given that Open does not have a clear pathway or a central, strategic vision to drive it as a movement, the selection of projects themselves is a symptom of the disjointed ways in which the idea of Open struggles to take shape or survive in India.

The year 2013 has been chosen as a starting point for this exploration because it was the year the Wikimedia Foundation extended a grant to the Centre for Internet and Society, Bangalore, to work with various Wikipedia communities in India towards the growth of the Open ecosystem in India. This last decade then is of grave importance to the CIS because it helps the organization reflect on their own work vis-a-vis that of other Open advocates CIS's work, since then, is available on its website through details of its initiatives via its

Access to Knowledge and Openness Programmes (see, for instance, their work on bridging gender gap on Indian Wikimedia communities, apart from a host of other training and advocacy initiatives here). This study is an aid to survey the idea and expressions of the Open as a broader movement and thus help CIS reflect on new directions and strategies to be pursued in the near future, to begin with.

However, there is more to the year 2013 than the happenstance of the grant to CIS per se: indeed, one can spot other organized efforts emerging in the Indian ecosystem since then. NPTEL (National Programme on Technology Enhanced Learning), which was established in 2003, began to offer MOOCs on its platform in 2014. Coincidentally, 2013 was also the year the Bichitra Project (an online variorum of the work of the Indian Nobel laureate Rabindranath Tagore), funded by the Ministry of Culture, went live. Together, the international foray into the Indian Open Movement and the governmental gravitas to strive towards making education and the literature of a great Indian author) accessible provide the rationale for this study's focus on the examination of the nature of championing for the cause of the Open, its successes, failures, and potential for its growth in the next decade.

The approach or methodology to explore answers to these questions involved: analysis of primary as well as secondary research available on the different initiatives in India; interactions with experts working in the Open domain in India including some Indian academicians, especially on the discussion of Open Access which impacts their publishing record, and in turn, impacts their career advancement. The reading and the conversations supplemented each other in the process of investigation: the existing literature provided facts through texts (blogs, papers, documentation on websites and so on) while the interactions opened up more nuances of intersections through perspectives that do not always make it to the static texts.

Any study on the Open Movement in India owes a huge debt to Arul George Scaria's gargantuan Open Science India Report (2019). At over 350 pages, it is a detailed study of Open Access projects and also includes a survey conducted among academic fraternity. It also offers concrete suggestions to strengthen access in research. It is remarkable for the larger view it takes of access to include access for persons with disabilities and access in terms of language, suggesting that research should also be accessible in Indian languages, and also in jargon-free English for wider audiences. Apart from Scaria's study, there are journalistic pieces about Open Data in India, given the relevance it has for governance.

Cover of A.G. Scaria's 2019 Report

This current study does not aspire to be monumental like Scaria's. However, it is hoped that its relevance to the ongoing conversations about openness would be noted at at least two levels. One, between 2019 (when Scaria's report was published) and 2023 (the end point of this study), socioeconomic changes such as COVID-19 and the resulting remote work, one expects, have highlighted the significance of openness. For instance, given the serious constraints it posed for travel, a lot of commercial publishers kept their resources open so that further research, within medicine and outside, could keep happening. Thus,

it becomes imperative to understand if the Indian ecosystem displayed any stronger endeavor towards openness. To anticipate a couple of suggestions discussed in the report below, certain things such as Indian researchers' apathy or disdain for Open Access has not quite changed in the span of these four years. However, Government of India's open initiatives such as Anuvadini and Bhashini around tools for navigating and producing content in Indian languages have started to appear.

Two, Scaria's study subsumed all knowledge under "science": in other words, science, in his report, is a metonym for knowledge. This current study, in being inclusive of humanities and the arts, especially as relevant to Open GLAM (Galleries, Libraries, Archives, Museums), engages with knowledge or movement in general irrespective of its disciplinary boundaries.

With that statement on where this report is situated, some notes about its structure are in order. This study begins with an overview of the legal and policy environment in India. It then moves on to explore the nature of Open projects in India. There are many ways to organize the narrative around Openness, with the domain wise bifurcation of the different aspects of the Open (The OPEN Movements, 2023). In contrast, this goes on to organize the projects around positionalities, rather than the domains. That is, the different projects and initiatives are narrativised as:

1. Public funded projects: These are endeavors emerging from funds provided by the Ministry of Education and Ministry of Culture and distributed via grants to Higher Education Institutes in India, especially the IITs. They stand out as one category in that they are characterized by
   a. the vision to provide basic infrastructure of education and archival material in the public domain
   b. the capacity to think and execute in terms of massive impact and scale
   c. a wide scope for aiming higher in terms of innovation, approach, and access

2. Volunteer undertakings: These are projects undertaken by non governmental organizations such as the Sanchaya Foundation, SFLC (Software Freedom Law Centre) and FOSSUnited characterized by
   a. a niche focus on a language or a domain or an audience
   b. a preoccupation with developing a community rather than delivering an output
   c. a qualitative aspect to engagement and documentation, as opposed to impact in terms of numbers

Within volunteer undertakings, the role of philanthropic foundations is very briefly touched upon. There are entities such as the SRTT (Sir Ratan Tata Trust) and SDTT (Sir Dorabji Tata Trust) that supported the cause of the Open in the initial stages via their investment in the larger educational and cultural cause. These foundations also seem to have discontinued their efforts in the long term perhaps given the scope of work involved. In addition to philanthropic foundations, mention is also made of international projects. The international Open Knowledge projects in India involve the Wikimedia Foundation and the Mozilla Foundation that have funded various initiatives in India and have continued to stay invested in the larger vision as well as execution of Openness through their grants.

The discussion of the above mentioned types of projects is followed by an examination of the attitudes of academicians teaching at Higher Education Institutes towards Open Access as a specific niche within the Open Movement. Conversation with faculty members in different institutions reveals that Open as an idea is not quite clear to the academia, or at least occupies a space of dissonance: while it is desired as an ideal, it is very strongly constrained by the judgments of fellow peers and employing institutions. In contrast, conversations with experts in Open Access reveals that Open Access deserves a

much stronger effort: not just to push for policy changes but also to decolonize Indian academia.

The study concludes with some threads that can be pursued from the projects the Open Movement in India has witnessed in the last decade. These points of engagement could become points of reflection for further initiatives in the next decade or two.

Legal and Policy Environment

The discourse of the Open finds some moorings in the discourse of law because it is often pitched in opposition to the laws of copyright and the legal protection extended to patents. Of all expressions of the Open, law and policy around Open Access is the most labyrinthine in nature. In this section, a rather long exposition on legal or policy guidelines on Open Access is followed by the state policies and institutions on other aspects of Open: OERs, Open GLAM, Open Data, and Open Source.

In India, the Copyright Act of 1957 (1957) and the Patents Act of 1970 (1970), with a major amendment in 2005 (The Patents (Amendment) Act, 2005), protect works of art, processes and products thereby preventing its unauthorized use by others.

The idea of invention is strongly associated with the archetypal individual genius who is seen as deserving of holding exclusive rights to develop the protected entity not only to exploit it for commercial gains but also to hinder others from developing it further. The copyright is not absolute though; it excludes fair dealing, as in using the concerned material for educational or research purposes. However, no such counterpart for exceptions seems to exist in the patent law.

Where copyright interferes with the Open Movement is its application to publication of research in journals, and in a convoluted way at that. The copyright, in most cases, does not exist with the researchers/authors that seek to publish their research in the form of research papers, articles and notes but with the journals that publish the research. The law that set out to protect authors and creators, in the sense of originators of works of art, in the mid 20th century, has continued to be invoked in the case of prevention of dissemination of research findings: here, the copyright is no longer a matter of the "creators" but the publishers of journals whose business model is based on monetisation of the content created by the authors.

The copyright law has been invoked quite a few times by the publishers in India. An important case from recent times that comes to mind is that of the publishers taking a photocopying set up within the university premises for photocopying materials for students (Kapoor 2020; Narayan and Rajput, 2014; Singh and Kumar, 2005; Liang, 2017; Thikkavarapu, 2018; Chawla, 2017). The court ruled that photocopying here was well within "fair use" because it was used for educational/research purposes and not for commercial ones. Nevertheless, publishing corporations continue to claim that they lose a lot of revenues thanks to activities such as photocopying as well as the availability of websites such as SciHub and Library Genesis. Given that not all educational institutes can afford huge budget for access to journals and other electronic resources, such persecution keeps research environment in India quite precariously located: those who are not at HEIs (Higher Education Institutes) with heavy funding do not get access to the content behind the paywall and struggle to proceed with their research, and whatever access they manage with "alternative" resources get either discontinued or stay in the ambit of being illegal. An alternative viewpoint is that resources, or the lack of resources, are not the only factor that make the Open projects successful. It is the other intangible aspects such as community effort that makes even the most resource-heavy projects appear less successful than the volunteer-led DIY projects. One might think of a paid-for encyclopedia vis-a-vis Wikipedia here.

The West has seen the emergence and even mainstreaming of the ideas such as the copyleft and Creative Commons, and practices such as allocating funds in the call for grant proposals for the dissemination of research findings through the APCs (Article Processing Charges) that journals charge for Gold Open Access. The former allows for the

Copyleft logo

article to be made available in public domain and transfers the cost of publishing to the authors by charging them for publication. The latter allows for the article to be carried on the authors' institutional repositories (IRs). The establishment of these IRs is another solution for keeping the research available: just as different funding authorities make space for funds for APCs, some also strive for making the research available on the IRs.

These policies around making at least publicly funded research available in the public domain are not embedded in grant making imagination in India. According to some draft policies (DBT and DST Open Access Policy, 2014), there is a provision for the formulation of institutional repositories for dissemination of research funded by DBT (Department of Biotechnology) and DST (Department of Science and Technology). Additionally, in certain cases, especially where institutions may not have repositories of their own, there is a provision for such public funded research to be made available on a central repository.

However, having the research available at the local, decentralized level, as opposed to a "center" is likely to enable higher consumption as well as ensure that both funds and infrastructure of development of multiple nodes of publishing percolate to local levels. But like the provision for APCs in grant proposals, the concern for making research available on repositories, especially through Green Open Access whereby researchers can self archive their work through uploading them on repositories, still remains a vague idea rather than a reality.

One must note that institutions that attract some funds from the RUSA (Rashtriya Uchchatar Shikhsa Abhiyan) do tend to earmark some amount towards APCs for publications by faculty members. However, there is no systemic provision for such investment into research conducted by faculty members and the matter seems to be left

to the decision makers of the beneficiary organizations. Opinions about whether there should be some explicit policy around defining some amount for APCs are mixed. On the one hand, it seems to be standard practice among international funding agencies to encourage researchers to account for APCs for dissemination of research findings. On the other hand, APCs are seen as a huge drain on already under budgeted research funds in countries such as India, with an argument being made that the practice of paying APCs should be stopped (Madhan et.al., 2017).
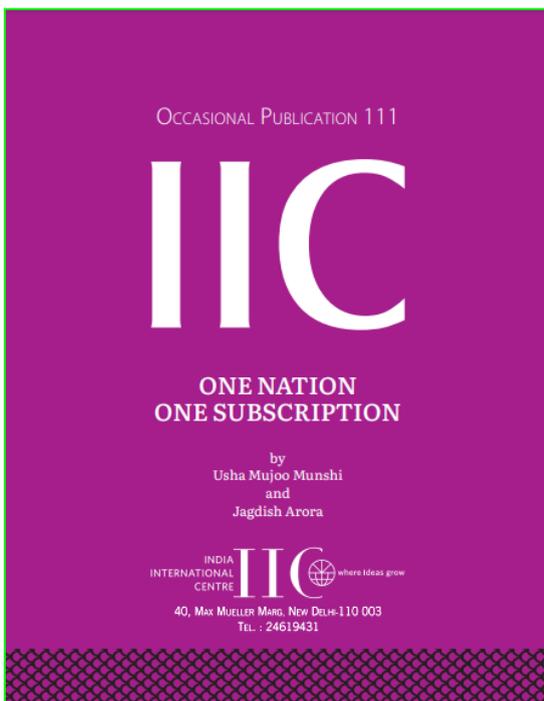
In recent times, the One Nation, One Subscription Draft Policy was floated to extend the reach of research content to all public institutions. The government's negotiations with the publishers keep failing. If the policy becomes a reality, all government institutions will have access to resources that only the elite HEIs do currently.

To shift this discussion of legal complications around openness to Open Source, one observes that on the side of engineering processes, products, and projects, even those developed by public universities, remain insulated with rights reserved. This adversely affects the struggles of low resource communities in the process of accessing justice, equity, and institutions of public good. However, MeitY (Ministry of Electronics & Information Technology), established in 2016 does attempt to release Open Source tools for varied purposes. MeitY, along with the initiative Digital India, also has several initiatives to cater to diverse governmental projects and can thus be seen as structural mechanisms to create a strong digital infrastructure for the nation. The tools and projects conceived and implemented by them help Open Data and Open GLAM. Thus, in terms of policy and legal environment, India does have a framework to cater to the needs of the Open. As we shall see below, some projects guided by such bodies are beginning to emerge and are likely to boost the growth of openness in data as well as GLAM. Finally, GLAM as well as OERs find state support through institutions such as the IITs. For instance, the NDLI (National Digital Library of India) is developed by IIT Kharagpur. The Ministries of Culture and Education too also have mandates to empower citizens with resources to engage with education as well as national heritage.

In summary, except for Open Access, which is strangely transformed into a system in which the researcher produces the research as well as the funds to publish it, and in which the incentives within the HEIs compel researchers to subscribe to this distorted implementation of Open Access, India does have some establishments that are beginning to create open, and thereby, safer environments for citizens to access information and knowledge.

Public Funded Enterprises

The Ministry of Education and the Ministry of Culture, through various schemes and schemes, keep providing various grants to researchers and HEIs to work on developing educational resources and archives for the preservation of heritage. The Ministry of Electronics and Information Technology (MeitY), through C-DAC (Centre for Development of Advanced Computing), stays invested in developing computing tools for the needs of education, health and so on. Below is a list of select projects funded by the Government of India.

Table 1: Select Public Funded Projects in the Open Space in India

Project	Year	Type	Audience	Funded by	Executed by
Tamil Virtual Academy	2010	Indian language, archives, computational tools	Tamil diaspora	Government of Tamil Nadu	Information Technology and Digital Services Department, Government of Tamil Nadu
Data.gov.in	2012	Open Data	General audience, researchers, businesses	MeitY	National Information Commission
Bichitra	2013	Archives, Indian language	General audience	MoC	Jadavpur University
NPTEL MOOCs	2014	OERs, MOOCs	Students (higher education)	MoE	IIT Madras
Abhilekh Patal	2015	Archives	General audience	MoC	National Archives of India
NDLI	2015	Library, OERs	General audience	MoE	IIT Kharagpur
SWAYAM	2016	OERs, MOOCs	Students (school to post graduation)	MoE	NPTEL, IIT Madras
DIKSHA	2017	OERs	School teachers and learners	MoE	NCERT
KSHIP	2017	Open Access	Researchers	IIT Indore	IIT Indore
Odia Virtual Academy	2018	Indian language	General audience (Odia)	Government of Odisha	E&IT Dept
Indian Culture Portal	2019	Archives	General audience	MoC	IIT Bombay
Project IndicWiki	2019	Indian language	General audience (Hindi, Telugu)	DST, MeitY	IIIT Hyderabad
Bhashini	2022	Indian language	General audience	MeitY	National Language Translation Mission
NDAP	2022	Open Data	General audience, researchers, businesses	Ministry of Planning	Niti Aayog
Anuvadini	2023	AI tool	School teachers and learners	MoE	AICTE

Because several of these can be put under specific domains, they have been discussed under OERs, Open GLAM, Open Access, Open Data, and Open Source.

Open Educational Resources

National Digital Library of India (NDLI) is a project sponsored by the Ministry of Education, Govt. of India. Developed by the Indian Institute of Technology Kharagpur, it is the most important initiative for the progress of the government's National Mission in Education through Information and Communication Technology (NMEICT). It is a single window platform providing learning resources that make e-learning and education accessible to all. It brings digital repositories from India and the world to users of all demographics.

The broad areas funded by the Ministry of Education cater to education (class 9 and upwards) through the MOOCs but also provide educational resources to school students. NDLI (National Digital Library of India) are DIKSHA OER libraries that contain educational materials from school to higher education levels.
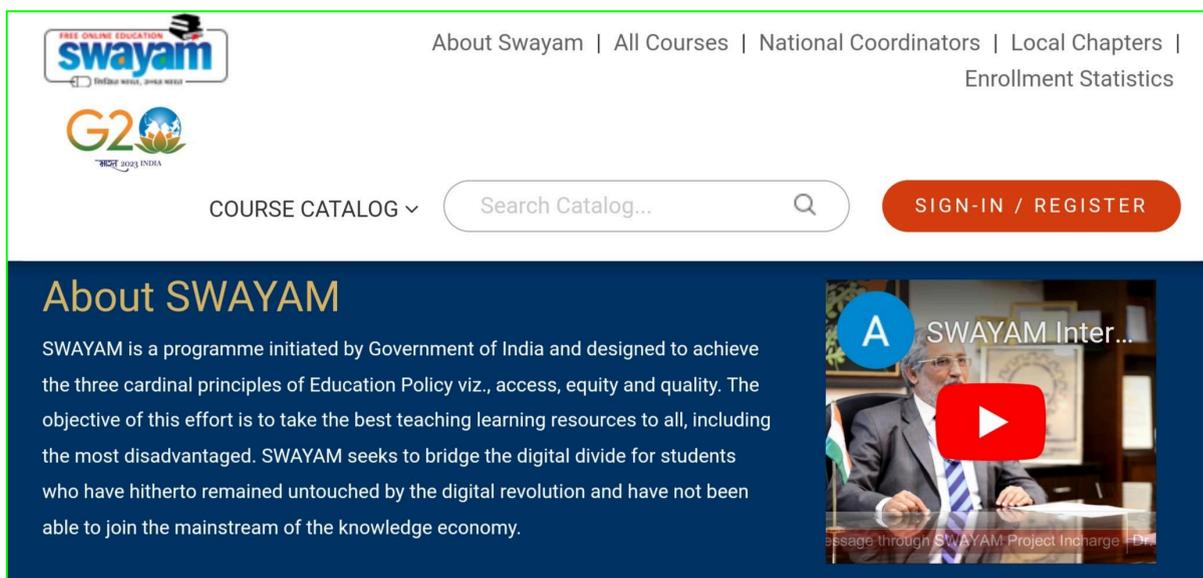
SWAYAM, and NPTEL host MOOCs offered by faculty members from the IITs that can be audited by anyone. Together, these platforms serve the purpose of formal education as well as of skill building.

[Anuvadini](#), on the other hand, is a tool-based platform, rather than a content based one. It helps users translate text based documents across 22 Indian and foreign languages. The objective behind its creation is to help users translate content largely available in English into other languages while also allowing them to use speech to text and vice versa, and image to text features.

Open GLAM

The Ministry of Culture funds major archival projects. Mention must be made of the [Indian Culture Portal](#), [Abhilekh Patal](#), and [Bichitra](#). The last one is perhaps the oldest, and the best known digital archive. Dedicated to the works of Indian Nobel Laureate Rabindranath Tagore, it is the world's largest collection dedicated to a single author. The Indian Culture Portal hosts a lot of data from various archives, libraries, and museums of India. The categories of content range from virtual walkthroughs to rare books, manuscripts and research papers. The themes covered include art, architecture, history, intangible heritage, food, archives and so on. The website also links to other portals such as Gandhi Heritage Portal to facilitate easier navigation to similar content on the lines of culture. Abhilekh Patal holds more than 2.7 million reference media in the custody of the National Archives of India. The website requires registration and payment which are specifically useful for requests for "Digitize on Demand" feature. The objective of this initiative is to provide easy access to historical data. While the payment feature does not make it open access, the website itself is part of open data.

The Information Technology departments at various levels also have their own projects in the Open Domain, interestingly most visible in the domain of Indian languages. Project IndicWiki, supported by the DST and MeitY, is one. Its objective was to develop content for various Indian languages, with a special focus on Telugu and Hindi.
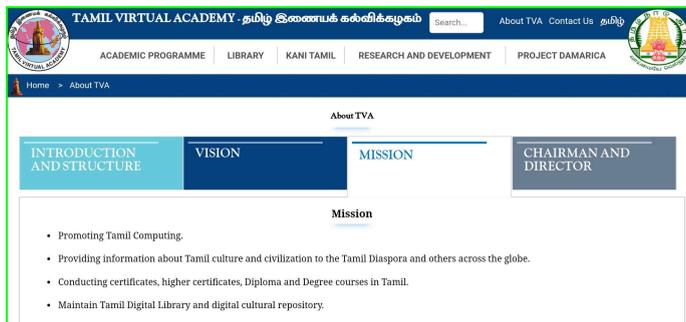
At the state level, the Tamil Virtual Academy, Odia Virtual Academy, and Kanaja (by the Karnataka Knowledge Commission) stand out for their work on offering language courses, language resources such as dictionaries, digital libraries or archives, and language tools such as spell check, OCR (Optical Character Recognition), Unicode, Text Recognition, Text Summarisation and so on. It also hosts awareness programmes in institutes of higher education for the need to work on Tamil computing resources.

Open Access
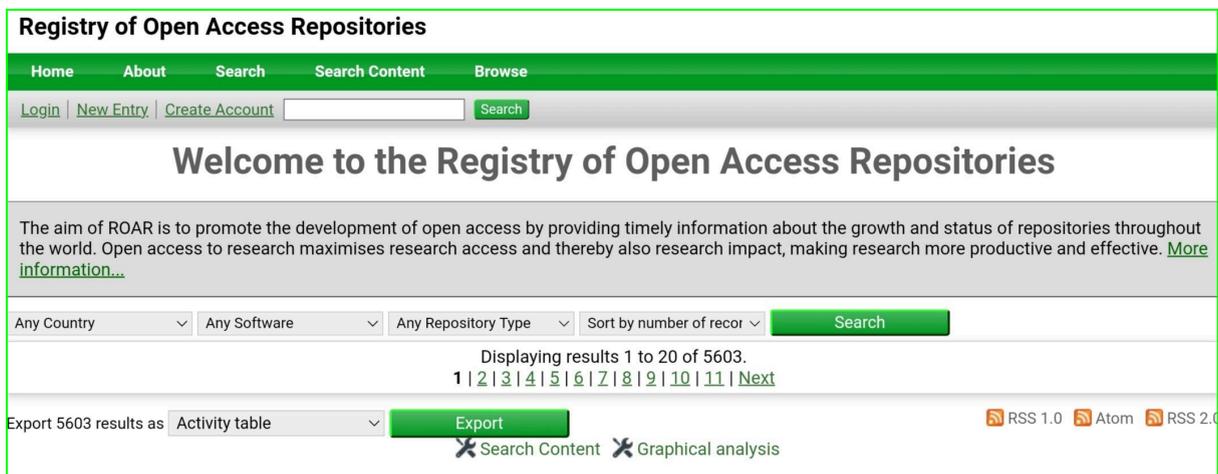
Open Access is at its most visible through platforms such as Shodhganga and Inflibnet: PhD research undertaken at Indian universities is made available on these websites. The Registry of Open Access Repositories lists 129 digital repositories in India that carry research papers. Various institutions have adopted the mandate of Open Access with NIT Rourkela being the first one and the Central University of Haryana among the recent ones. Decision making bodies such as the CSIR, Indian Council of Agricultural Research (ICAR), Department of Biotechnology (DBT), Department of Science and Technology (DST) have made their statements regarding the adoption of Open Access as a policy. However, not a lot about such statements seems to be taken seriously by universities: there is a race to get published in indexed journals and in as little time as possible which makes faculty members pay APCs to commercial publishers. What worsens the situation is that the

NIRF ranking and other accreditation processes investigate institutions' research profiles in terms of metrics such as Scopus and Web of Science indexed publications. Institutional repositories and non-indexed journals hardly receive any weightage. Through IIT Indore's KSHIP project, the idea of Open Access publishing might become mainstream or acquire a sense of respectability given that it is an initiative by a prestigious institution. However, whether its publications would be considered as equivalents of Scopus or other indexed publications is yet to be seen.

Open Data
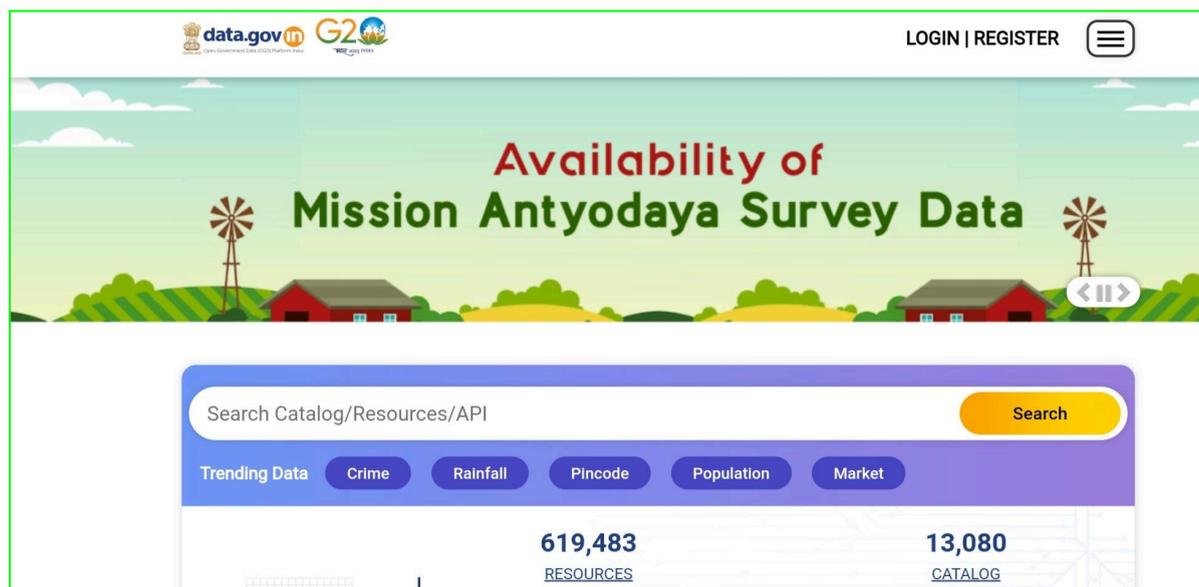
As per Government Open Data License (GODL) and National data Sharing and Accessibility Policy (NDSAP), anyone can use Open Data for commercial and non commercial purposes. Digital India initiative Pillar 6 (Information for All) has facilitated the organization of the Open Government Data Portal (OGDP). It is designed by the National Informatics Centre under MeitY. Its objective is to "facilitate the access to Government owned shareable data and information in both human readable and machine readable forms . . . thereby promoting wider accessibility and application of government owned data and unlocking the potential of data for national development". The website has individual sub websites for some state level Open Data platforms as well as specific platforms such as those dedicated to visualization of data, communities, and smart cities. Another government website to aggregate and host datasets of Open Data is the National Data and Analytics Platform (NDAP). It is designed by NITI Aayog and uses various OGDP portals (and other ministry and departmental websites) as sources. The portal holds 2509 datasets from across 18 sectors and 52 Ministries. Under the Digital India Initiative, decentralized versions of Open Data are available at municipal and state levels as well. Examples include Pune Data Store, and Open Data Telangana. These initiatives have also made space for the institutionalization of designations such as Chief Data Officers and awarding of Open Data Champion.

While there seem to be the right kinds of policies behind these projects, the practice of sharing data with citizens is far from realized. Sanjay Sinha, Consultant with the Real Time Governance Society, Government of Andhra Pradesh, observes that data officers, public servants, and government officials in general hesitate to share data with the public. The hesitation comes from a lack of guidance on what openness means and why traditional (read non-digital) departments such as revenue, and forests do not want to have anything to do with it. In contrast, departments such as the Pollution Control Department do

publish real time data and therefore, the concept of sharing data is not alien to them. Unless data such as the Census data which are made freely available by design from fiercely independent, centralized bodies such as the Office of the Registrar General and Census Commissioner of India or the NFHS (National Family Health Survey), there is very little hope for transparency in smaller bodies or departments. That all data is public data and that no one should have to justify why they are asking for any specific piece of data is common knowledge. Even then, seeking data remains a tedious bureaucratic affair for citizens. A solution, Sinha suggests, is for the higher officials to issue proper orders and measure follow-up progress, without which those handling everyday clerical affairs do not feel motivated to practice openness with data. An example he points to is the RTI (Right to Information) whose roots lie in release of data for the MGNREGS (Mahatma Gandhi National Rural Employment Guarantee Scheme). In his opinion, the Scheme has facilitated the creation of the world's most transparent data rich ecosystem. Finally, he says, we need much stronger civil society voices or organizations to champion the cause of Open Data.

Open Source
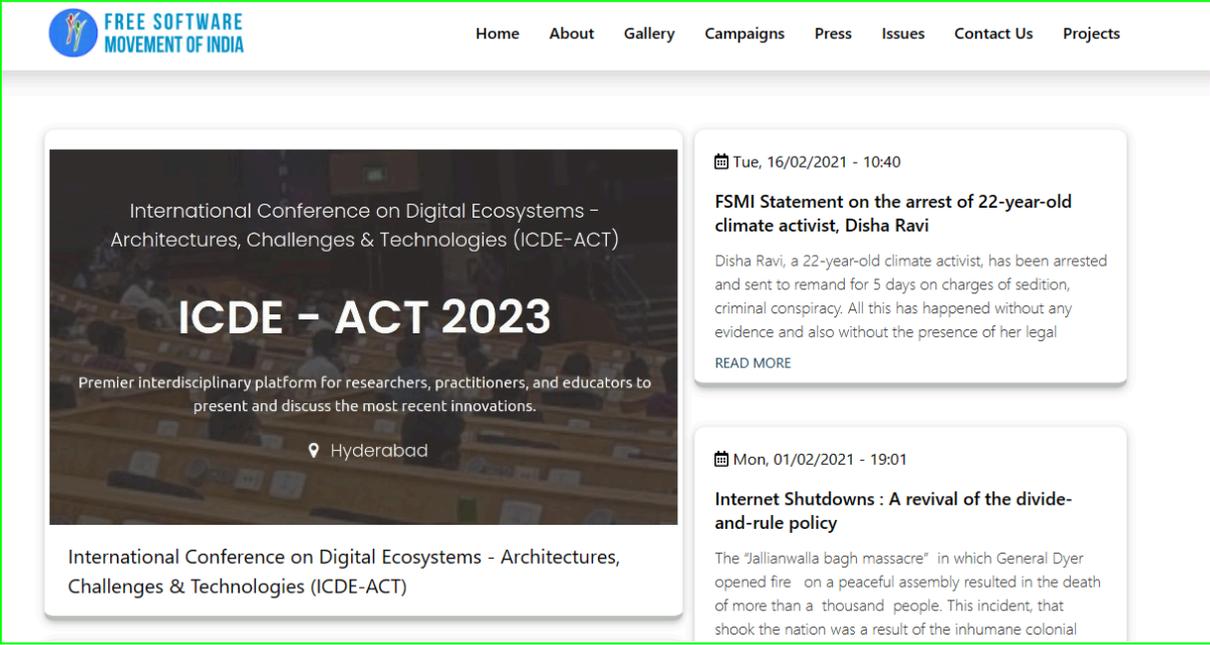
The Open Source movement is officially spearheaded by [Free Software Foundation](#) of India (available at) as the India Chapter of the Free Software Foundation founded by Richard Stallman in the US to lead the movement at a global scale. There is also a parallel, volunteer organization called [Free Software Movement of India](#) which is a coalition of different regional free software movements such as Kerala's International Centre for Free and Open Source Software ([ICFOSS](#)) which is an autonomous organization set up by the Government of Kerala. However, among its members is the [Free Software Movement Karnataka](#) which is not a governmental organization.

MeitY's [FOSS initiatives](#) include National Resource Centre for Free & Open Source Software (NRCFOSS) which caters to the FOSS community in India as well as supports the global FOSS community. Its Bharat Operating System Solutions (BOSS) is an indigenized Linux operating system for 18 Indian languages as desktop and server versions. GCC or GNU Compiler Center such as the one at IIT Bombay and C-DAC (Center for Development in Advanced Computing at Hyderabad, Mumbai, Delhi and Chennai). [Bhashini,](#) also by MeitY, is an initiative to leverage artificial intelligence to "remove language barriers", essentially using machine translation tools. The platform is expected to enhance citizens' access to digital services and contribute content in Indian languages on the Internet.

Overall, these projects are located at the elite institutes in the country and owned by the decision making bodies in the education sector, such as the UGC and the NCERT. Quite aptly for the Indian context, these projects are designed to cater to the pedagogic needs of the education system of the country. With the archival work as well, the GLAM focus is on the well-known Tagore's oeuvre. The archival collection (such as the India Culture Portal) is beginning to address the need to have basic elements of Indian history and culture in one place. The project seems to be evolving at the level of ownership: as evident on the website, it seems to have emerged from aggregating content from different sources. The website steers clear of copyright issues asking the readers to point out if the content being carried there is infringing on any copyright. These are mega projects carrying huge corpus of materials and being used by a large number of people. For instance, the NDLI website alone claims to attract lakhs of users. However, given the digital needs of the country, the number is envisioned to be much higher. Most importantly, these projects need to be amplified in terms of access and representation.

The canon needs to work with more authors (beyond Tagore, that is, by looking at regional literary histories), and the pedagogic projects need to get more inclusive in terms of knowledge engagement in Indian languages while also simplifying the usage or consumption of these projects for low resource communities.

Against the centralisation of the funding as well as execution of the Open projects, the contribution of the states to both education and culture or archives is miniscule. For instance, in the projects mentioned above, only the Tamil and Odia projects have emerged from the state governments. If this pattern of envisioning the Open with the Center focusing on education and the states focusing on regional languages continues, one is likely to see education and national history being located separately from the concerns of linguistic resources for regional languages. The questions that arise for future projects are: what kind of mechanisms and resources would the state governments need to enable in order to activate archival spaces and regionally-informed open educational spaces? What kind of inter-state support can be envisioned for projects at the intersections of culture and language? How would the states respond to the overarching pedagogical and archival vision project by the Center?

In summary, the projects discussed above seem to be operating in silos. Because there does not seem to be a clear system or policy for integration of Open as a thought process, different organizations seem to be operating separately. For instance, Open Data has two portals: OGDP and NDAP. Similarly, with reference to Free Software Foundation of India and Free Software Movement of India, Open Source seems to be operating with lines blurred between official governmental and non governmental bodies. Consequently, India's representation to the international Open Movement is not as strong as it can be. For example, while India's GDP is available as open source for other countries to adopt or implement, India does not have a clear stand on Coalition S for Open Access. India does not have a strong representation in international bodies such as the WIPO (World International Property Organization), the Wikimedia Foundation, and the Mozilla Foundation.

Volunteer enterprises

In contrast to the governmental initiatives, the projects initiated and sustained by volunteer communities have been more varied and niche. These do not have the resources to imagine projects that can attract lakhs of users. However, what they do demonstrate is an ability to sense the gaps experienced by the different communities at the micro level. Their strength lies in the way they stay invested in building networks or communities of help to nurture a spirit of self-reliance with a DIY attitude in domains as diverse as software development and literary heritage.

Table 2: Select Projects Run by the Volunteer Communities

Project	Year	Type
Swathantra Malayalam Computing	2002	Indian language, computing tools
Janastu	2002	Software for low resource communities
Swecha	2005	Software
Indian Cine.ma	2008	Archive
SFLC	2010	Law and technology
Sanchaya	2010	Indian language, archives, computational tools
DataMeet	2011	Open Data
IndiaSpend	2011	Open Data on social and political economy
Rekhta Foundation	2013	Indian language, archive
Storyweaver	2015	Platform for children's books
Open City	2017	Open Data on cities
FOSSFwd by Tech4Good Community	2018	Software
FOSSUnited	2020	Software

Below is a survey of a few examples of Open volunteer enterprises. While it is impossible to include all projects here, the ones included can be starting points to explore similar enterprises and to understand the diversity of causes they support.

Open Source
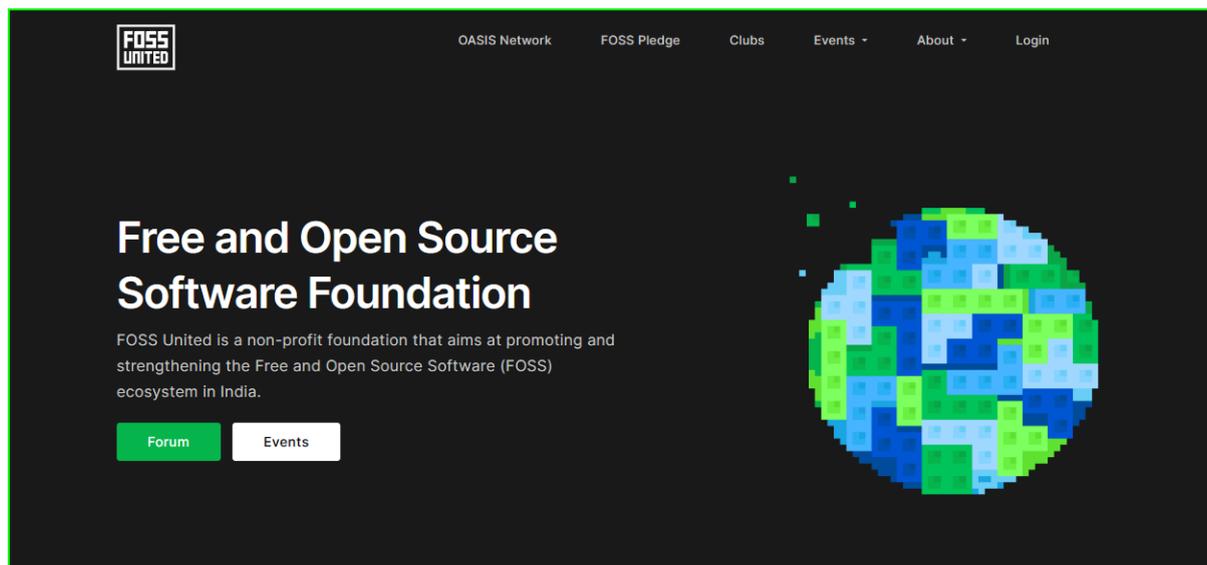
[FOSSUnited](#) was founded in 2020 to extend support to FOSS projects in India and to foster stronger relationships between the FOSS community and industry in India so that FOSS can be used for public good. It also seeks to promote the use of FOSS in academia and the social sector.
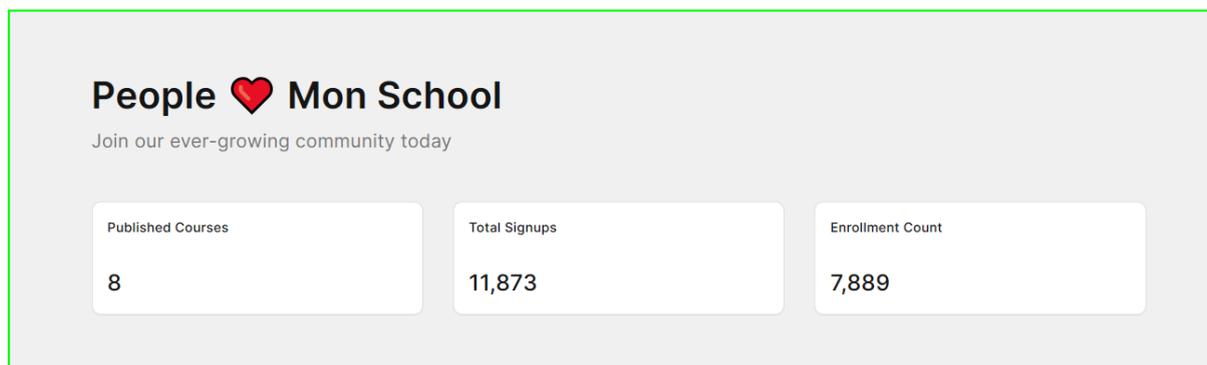
Among its projects is [Mon.School](#) that helps anyone learn coding through courses such as Python Primer, Data Analysis with Python and more. Anyone is encouraged to create courses that can help others accomplish their goals with the study of technology. As of December 2023, the website shows over 11,000 sign ups with 694 course completion and over 7,000 courses in progress. The project also has competitions such as "Code a Pookkalam" and "Devsprint"to keep the community engaged. [ERPNext](#), another project by FOSSUnited makes it easier for organizations to run their projects or systems easily on an open source platform.

[Joy](#) is their library on Github that allows users to work with computational artistry helping users generate images with code. [Falcon](#) is the service by FOSSUnited that helps users execute code in a sandboxed environment. It can be used in any programming language. Their FOSSUnited Platform is a repository that can be used to make one's own projects available under the APGL (GNU Affero General Public) license v3.0. Their community meetups bring together developers, students, policy makers, and those interested in FOSS in different cities in India to help everyone showcase their projects and hold discussions about FOSS. They also organize conferences from time to time in which FOSS enthusiasts,

professionals, researchers, students, designers, and bureaucrats. These "unconferences" focus on different tracks related to programming and the ecosystem in which they are deployed while also holding workshops for learners and communities offering exposure to FOSS tools. Their hackathon, FOSS Hack, also brings together students and professionals to work on different projects across domains.

Janastu, founded 2002, is an open source collective. It is an initiative of Servelots that provides open source solutions to nonprofit entities, especially among low-literacy communities, especially those living in low connectivity zones. It has been involved in various projects such as COWMesh (Community Owned Wireless Mesh) providing communities with hyper-media platforms to publish their content. Papd is their annotation tool for audio and video content that low literacy communities can use to preserve and disseminate their knowledge traditions and stimulate dialogue on anything that they choose to focus on. Like all their projects, this one does not require great expertise in reading and writing in order to navigate web publishing or community building projects. With CnBox (for Community Networking), Janastu empowers such communities to annotate recorded meetings while also storing them on local devices (rather than on a central server) which in turn helps the communities follow up on their activities. Their Renarration Web converts text heavy content on the Web and creates alternative narratives for it (such as visual stories) so that it is understood by low-literate users. With Follow the Sheep Project, they help shepherds graze their sheep on specific routes. They have many more solutions that enable communities to strengthen their networks and communicate with each other.

Initiatives by SFLC.in

The Free Speech Tracker is a crowd-sourced research project developed by SFLC.in to track the instances of free speech violations and the laws governing free speech in India.

Track the prominent ongoing cases in India which deal with the issue of digital rights along with cases where SFLC.in in various capacities, has provided legal support.

Hands-on training, simplified explanations of law and technology, and demonstration of easy to use tools to manage and protect your privacy and security in the digital...

[Software Freedom Law Centre](#) (SFLC) was established in 2010 to defend digital freedom and civil liberty on the Internet and promote open knowledge, free speech, online privacy, innovation and equality in India. It works with law experts, policy analysts, students and tech professionals to develop awareness regarding law and governance on the Internet and also extends legal advice on a pro bono basis to those in need. Its interventions are also intended at equipping policy makers with socio-political perspectives on law that relates to technology. An example is the use/spread of misinformation and disinformation during elections. It provides training to , tracks Internet shutdowns, litigations that relates to digital laws/rights and free speech violations in the country, brings together lawyers under its Digital Defenders Network, and provides digital security training.
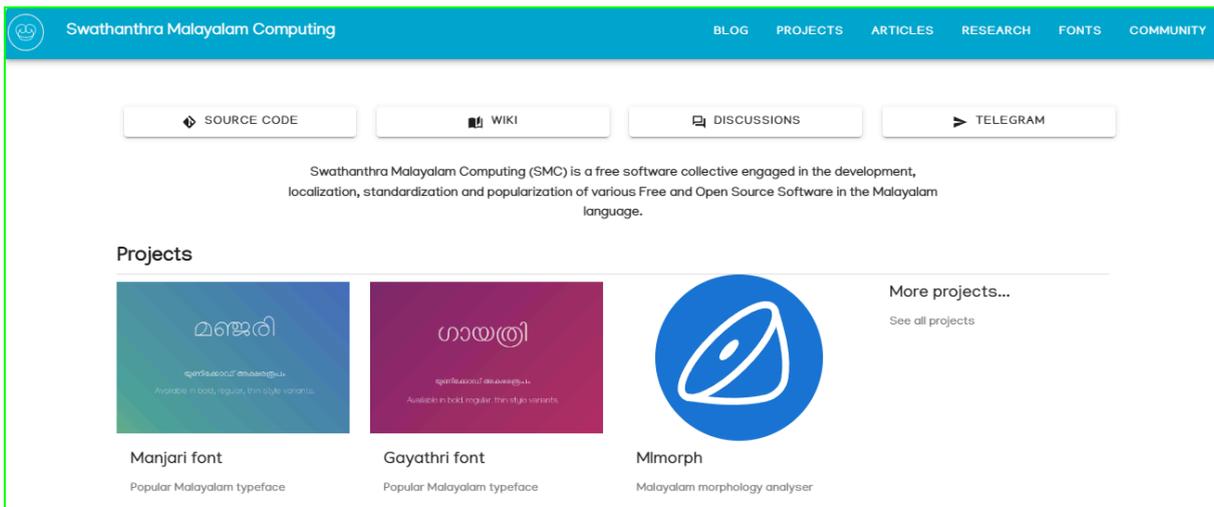
[Swathanthra Malayalam Computing](#) takes care of FOSS tools for Malayalam language: font, text to speech tools, dictionaries, spell check and so on. It is a very large language technology developer community in India and works with government, semi-government, and industry to facilitate easier access to Malayalam in digital technology. They are a mix of technologists, language experts, journalists, writers and Wikipedians. Their work gets updated on the website in the form of research and articles and tools/projects such as the Unicode, fonts, OCR technology, keyboard layout, transliteration tools, machine translation, text prediction system, corpus building, data collection, bibliography, Malayalam/English (Manglish) text generation, text similarity detection tools, apart from others.

Our Flagship Projects

Agri Tech

Contribute

Building Free Software based tools to further enhance agriculture through drones and other robotic automation, weather and crop information dashboards, IoT-based intelligent farm management.

Edu Tech

Contribute

Learning Management Suite designed for Tech-Aided education, assisted by Free Software. Building Free Software tools fuelled innovation in teaching and learning, to reduce digital divide and help educational institutes to adopt hybrid learning model.

Health Tech

Contribute

Free Software is transforming HealthCare with its radical transparency and ethos, making healthcare software more affordable and responsive to the communities it serves.

Civic Tech

Contribute

Building Free Software powered infrastructure and platforms that enable civic participation and engagement, enhancing citizen communications and public decision, improving government delivery of services.

Language Tech

Contribute

Building tools and platforms used to manage the localization(l10n) and translation of Applications. Language tech encompasses everything from maintaining multilingual glossaries, machine translation, to translation memory and term bases, as well as quality assurance automation tools.

Assistive Tech

Contribute

Accessibility to digital technology is increasingly critical for all aspects of life from education to employment to daily living, health and almost all types of participation. Digital accessibility(a11y) can be achieved in its full form only with Free Software.

Swecha, founded in 2005, works in the domains of agriculture, education and health to provide free software resources, the codes for which are available on their website. Its work also extends to civic health (monitoring air, water, and traffic), web extensions (detection of fake news and alerts related to breach by CDNs and similar activity by tech giants GAFAM – Google, Amazon, Facebook, Apple and Microsoft), and assistive tech through privacy-aware voice based technologies especially for Telugu. Its work around Telugu speaking states in India is the most documented one on its website. Through the BalaSwecha initiative targeted at schools for the underprivileged in India, it provides simulations, videos and quizzes based on learning concepts. The content is produced and maintained by engineering institutes in Andhra Pradesh and Telangana. These institutes also adopt the schools and meet the students from time to time to supplement online learning with offline interactions to understand the students' and teachers' challenges in the teaching learning process. The Foundation also provides training for those working in the industry as well as for educational institutes helping them with installation and hosting of free software that can be useful for various needs of organizations. Its motive is to make digital resources accessible in Telugu and it makes its projects and solutions licensed under the GNU General Public License.

Tech4Good Community

An organization started in 2018 that works towards strengthening the tech capabilities of locally rooted nonprofits solving for development challenges across climate, health, education, policy and livelihoods with cross cutting areas of gender & communities.

FOSSFwd by Tech4Good Community is among non profit organizations helping other non profits spread awareness about existing tech products and solutions as well as leverage the same for various organizational needs such as payments, data collection or ERP.

Vigyan Ashram might seem to be an anomaly in this list of Open projects funded by the non governmental organizations. It works in the socioeconomic sphere, helping those who are at a disadvantage when it comes to access to knowledge and technical resources. Through its Design Innovation Centre, funded by the MHRD's National Initiative for setting up of Design Innovation Centers, Open Design School and National Design Innovation Network, it helps those who have interesting ideas to convert them into products. Through its Learning While Doing project, it makes its own lesson plans available so that institutions with limited resources can make use of innovative pedagogies to help students learn better. Through Startup Saarthi, the Ashram helps anyone with a zest to become an entrepreneur by extending capital and support. All their projects seem directed at making science and technology accessible to those on the wrong side of the digital divide. Their projects in Open Innovation and similar outfits are supported by various governmental and non-governmental agencies such as the Department of Science and Technology and Praj Foundation.

Open GLAM

MaNaSu (Mannam Narasimham Subbamma) Foundation was started in 2006 by three brothers Mr. Mannam Venkata Rayudu (Popular as Manasu Rayudu), the eldest, a Bangalore-based Electronics Engineer and Businessman, Dr.Gopicahand Mannam, a well-known cardiac surgeon and Managing Director, Star Hospitals, Hyderabad and also well-known for his philanthropic activities especially in the areas of Medical Care through Hrudaya Foundation and their younger cousin Dr. Mannam Chandra Mouli, a reputed journalist and book publisher and one of the leading team members of TV 9 Telugu.

Manasu Foundation works in Telugu literature by re/publishing works of iconic writers and also to push for translation of works from other languages into Telugu, especially that concern pre-modern Telugu society. Some of the ebooks published seem to be accessible via a Google Drive for which one has to request access. The Foundation is also interested in making information about Telugu cinema available in the public domain.

Sanchaya Foundation is a cluster of digitisation, language, and software projects related to Kannada. The aim of these projects is to enable archival work and linguistic and literary research in Kannada literature with the use of technology. Their mission is that of "creating atmosphere around Free Information and Free Knowledge through free Software" (which is why this project belongs to Open Source as well and is an example of several similar projects dedicated to regional literary traditions as they too work with both literary archives as well as linguistic tools). Its Vachana Sanchaya project, for instance, is dedicated to lending the Vachana literature (dating to the 11th century) to research through digital access. It has also digitized the work of several individual authors, making them freely available to students, researchers, and Kannada readers in general.

Adieu Chandita Mukherjee

Remembering Chandita, the origins of COMET and *Bharat Ki Chaap* Her annotated essay, 2014.

The first job I got was with Indian Space Research Organization, in the Satellite Instructional Television Experiment (SITE). India had the use of a satellite from NASA (National Aeronautics and Space Administration, United States of America) for one year from 1975 to 1976. A whole bunch of us who had emerged from Film and Television Institute of India got to work as part of this 'experiment'. We were part of a merry crew. For the first time we had access to portable cameras, which made us feel like great revolutionaries. Surprisingly we had a free and open hand to do what we wanted which was not normal with government organizations of the time, considering the Emergency was on in 1975. SITE was the beginning of Bharat ki Chaap and this was 10 years before BKC was commissioned by ISRO.

Pad.ma and Indian Cine.ma, active since 2007 and 2008 when they were founded respectively, are film archives and continue to add different projects to their portals. For instance, their 2019 Ghar Mein Shehar Hona project is about housing histories blending cities' representation in cinema with insights from present times/locations.

ABOUT US

Rekhta Foundation has established a free website Rekhta.org with the objective of promoting and disseminating Urdu literature, especially Urdu Poetry to an audience beyond those conversant with the Urdu script. The content is available in Devanagari and Roman scripts in addition to the Urdu script.

The website has a global readership from over 160 countries across the globe. In less than a year, it has attracted wide acclaim and has been highly appreciated not only by laypersons and enthusiasts but also by Urdu literatures from India, Pakistan and other parts of the globe.

Rekhta has quite a few projects such as Rekhta.org Hindwi, Sufinama, Rekhta Dictionary, Aamozish, and Rekhta books which are dedicated to Urdu literature in various ways. Some endeavor to keep the poetry available in public domain while others strive to keep the literature accessible in the Devanagari and Roman scripts.
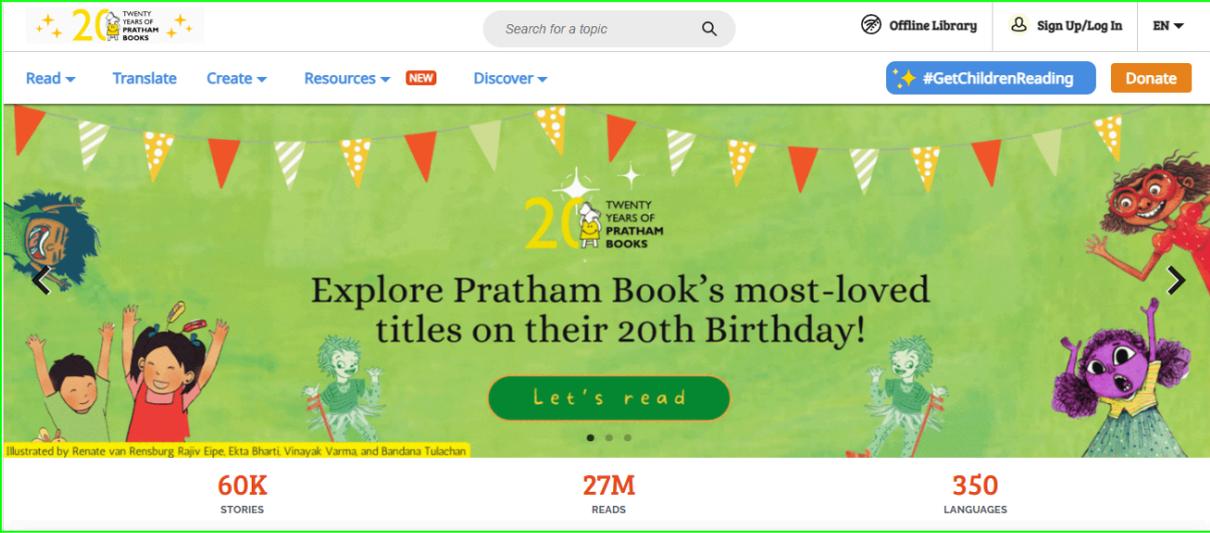
Open Educational Resources

[Storyweaver](#) is a self styled digital library for kids. It offers a huge collection of reading and learning resources (over 57,000 titles) in various Indian languages, apart from international ones, in line with their vision to work towards SDG 4 related to quality education.
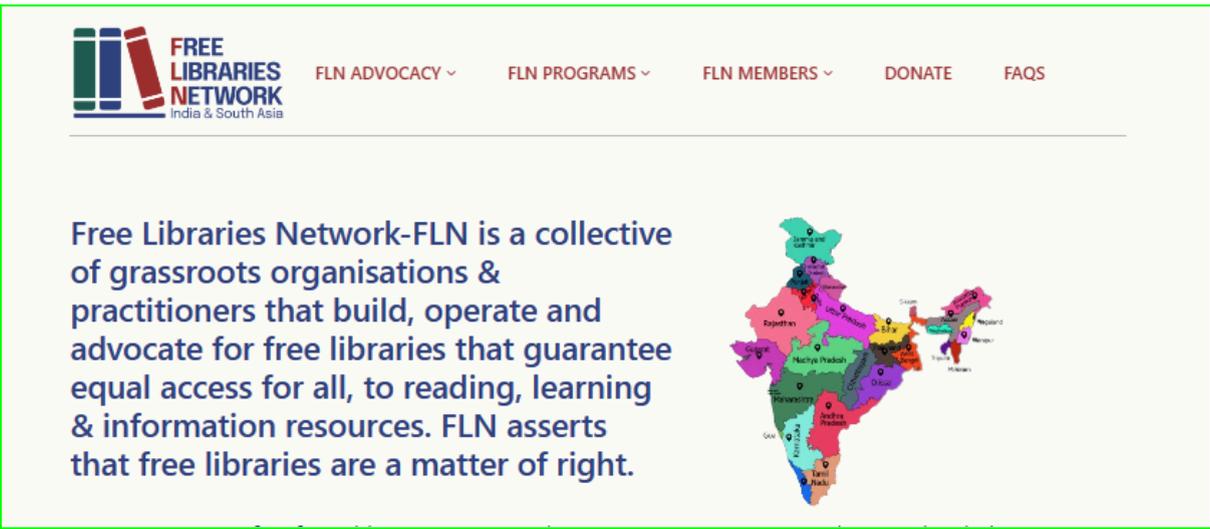
[Free Libraries Network](#) is a collective that represents free public-access libraries in India. It believes that free libraries are a matter of right and it therefore seeks to facilitate free and equal access to libraries and learning and information resources as a means to education, inclusion, sustainable development, mental and spiritual well being. It is anti-caste and gender and disability inclusive. Given that it connects with digital libraries too, its work with librarians and library activists on crowdsourcing and open access curriculum resources as well as activism in the form of sharing of curated materials via newsletters makes it relevant to any discussion on open knowledge prompting one to emphasize the role of libraries as institutions in the space of the open movement. It is a unique Open project in the sense that it is not digital, not primarily at least: most of the libraries in the network are physical libraries. Conversations with Purnima Rao, Director, Free Libraries Network, help one appreciate the fact that one must be careful while conflating digital with Openness because a lot of work has been happening at physical, grass-roots expressions levels. Indeed, that is where a lot of Open initiatives are needed given the digital divide in the country.

As mentioned earlier, these volunteer projects are very niche. In contrast to the OER-based projects funded by the Ministry of Education, for instance, Storyweaver takes a very nuanced view of what education means. In its designing of the platform for storytelling, it recognises that an academic or formal orientation to learning needs to be supplemented by nurturing of playfulness, creativity, and storytelling.

Open Data

[DataMeet](#), [Open City](#) (which was founded by those behind DataMeet), [IndiaSpend](#) are among very striking volunteer contributions to Open Data. These non-profit entities leverage data available elsewhere and try to make it accessible to citizens by either aggregating, representing it in easy to understand ways, or sharing tools that can be used to access Open Data in general.

Sometimes, when some volunteer communities and projects are noticed to be doing well, they attract the attention of international organizations working in the Indian space such as the Wikimedia Foundation and the Mozilla Foundation. The former has been funding the Center for Internet and Society's Access to Knowledge program to stimulate projects in Indian languages. Pavan Santhosh, Program Manager of the organization's Access to Knowledge Program, adds that the CIS was uniquely positioned to step in given the fissures among and within the different languages' communities. Through its work with the volunteer communities, CIS has extended training in writing as well as conversed with the communities regarding resource management and other aspects of growth of the communities as well as its presence through the different projects.

Table 3 Selected Indian Language Wikipedias in the Last Decade*

	No of Users in 2013	No of Users in 2023	Average Site Views per day 2013	Average Site Views per day 2023
Telugu	5537	8131	50289	228264
Kannada	4132	6092	30380	141878
Marathi	9101	10109	69187	281934
Hindi	23471	61302	373693	2075996
Urdu	5420	17212	72794	167126
Gujarathi	3522	5102	20528	53142
Bangla	14912	40728	178534	837526
Kashmiri	481	1117	833	2608
Tamil	13440	14555	109386	457590
Malayalam	10544	10125	60098	194426
Bhojpuri	790	3413	4261	30045
Sindhi	576	1637	2303	7628
Maithili	335	1523	1429	11386
Konkani	900	1149	1348	2981

*The data presented may exhibit a slight margin of error, with a potential difference of up to 5% from actual values, attributed to possible data inaccuracies in the database.

Additionally, CIS has been participating in various national and international conversations about the Open and making statements about the policies, bills, and so forth to share ideas and frameworks that can positively impact the direction of the Open Movement in India (Koley, Goveas and Choudhury 2020; Sinha, 2014; Sinha 2015a; Sinha 2015b; Sinha 2016; Sinha 2018; Sinha 2020; Sinha and Scaria 2021). Tanveer Hasan, Executive Director, CIS, observes that CIS has been stepping into these conversations because the Open Movement in general tends to be dominated by those with a background in technology. One of the things CIS seeks to address is to broaden the scope of these conversations from the perspectives of communication, policy, and social science tying it with questions of equity and justice. While the work involved in the growth of Wikipedia projects in India requires an independent study, the table above provides a tiny snippet of its usage that has expanded in the last decade to illustrate the larger public investment in and reliance on Open Knowledge projects.
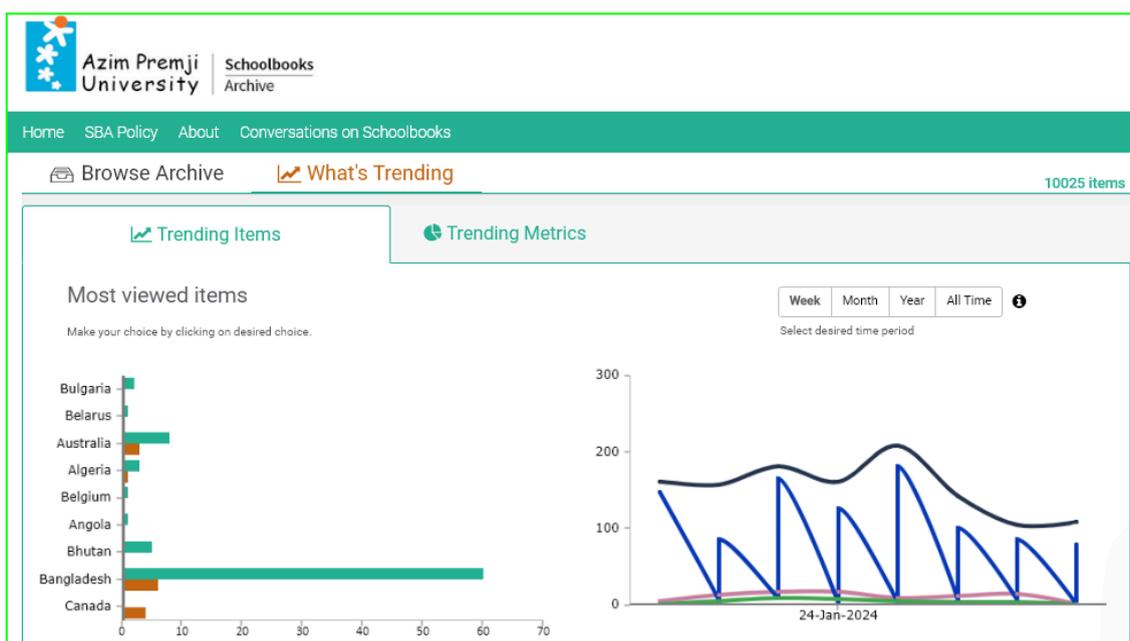
Other foundations, international as well as national, remain involved in the Open space in India. For instance, the Mozilla Foundation awards Responsible Computing Challenge grants to select technology projects in India, which may not directly be concerned with Openness but they do make space for ideas that involve larger social collaborations. Another example of foundations supporting non profit initiatives is that of Pratham Books, the non profit publisher of children's books, is the organization behind Storyweaver. The Schoolbooks Archive by Azim Premji University hosts textbooks for school students located in South Asia to help teachers looking for educational resources as well as support research on pedagogy in the region.

The non-governmental sector, thus, has been quite vibrant in terms of identifying areas that need to be kept open. This observation should not discount the fact that it poses its own set of problems, one of the most glaring being the gender gap within the communities. It only makes a stronger case for the sector to get more organized and introspective about strategies and alliances it needs to engage in to make Open a stronger movement in India. As visible in the survey of the projects under non governmental projects, these non-public initiatives are more invested in the Open Source, perhaps indicating that niche efforts in the DIY are more feasible to do justice to regional or specialized concerns. It would be unrealistic to expect them to cater to pan-India needs in general.

Open Access: A Closer View

Open Access as a specific subdomain within the Open Movement could be used to understand what ails the overall Openness in India. Doing so also allows one to represent one case study within a very multi-faceted space. It is also an apt case study in that it is situated at the heart of knowledge-creation that impacts other aspects of Openness. It reveals deep misunderstandings symptomatic of the fractured state of the Open Movement in India. It is also an area where the state alone might be seen as playing a larger role because civil society does not have the models to build and sustain an Open Access project (unlike OERs, or Open GLAM or Open Data, or Open Source, as shown above in discussion of volunteer projects). If individual initiatives do come up, the legal claws of copyright are there to demolish them, by pushing them over to the side of illegality.

As an idea, Open Access refers to keeping research, at least the one sponsored by the government through grants funding public universities and other higher education institutes and offering grants to conduct research at others. Because this research is made possible with public investment, it is argued that the research findings ought to be made available publicly. While the idea sounds simple, even commonsensical, it is caught in the quagmire caused by private publishers' interests to treat research as content that should be subscribed to and the lack of regulation or policy regarding the mandate of owning this research as public good, and therefore, open by default.

The problem is further complicated by the fact that the model arrived at by the publishers requires the researchers, and thereby their funding authorities, to pay to the publishers to keep the research in Open Access through Gold Open Access which requires the researchers to pay Article Processing Charges. The problem of the paywall stays: only the party that the amount for access it is billed to changes. That is, instead of charging the reader or institutions that subscribe to the journals where the research findings are being published, the publishers charge the researchers who want their research published. Prof Rahul Siddharthan, The Institute of Mathematical Sciences, recalls that the justice and equity based movement for Open Access was co-opted by publishers into a revenue model. What started out as championing for an open circulation of knowledge has turned out to be an exclusionary practice that works against the researchers in developing countries as well as researchers who do not have funding, making it harder for such researchers to pursue research.

A third dimension to the complicated mess that Open Access has turned out to be has to do with the universities' and researchers' attitudes, and even lack of awareness, towards Open Access. Because of the Article Processing Charges, the practice of publishing on Open Access forums tends to attract a lot of stigma. That is, those who pay the Article Processing Charges are considered to be indulging in "pay to publish" practice or as innocent victims of predatory journals. Dr Arvind Singh, Assistant Professor in Physics at Khalsa College in Mumbai, notes that Open Access is a joke. A lot of the teaching fraternity in India does not understand the difference between predatory journals and the ones that are indexed in indices such as Scopus and Web of Science. However, the publishers, even of indexed journals, also harm the cause of the Open Access when they reject papers of good merit if the authors refuse to give in to the journal editors' explicit request for Article Processing Charges. Since the idea of Open Access is predicated upon money exchanging hands, it is very soon likely to turn into a scam: wherever possible, ten or more authors (a number that is quite a norm in the domains of sciences and engineering) can come together to submit an article or paper towards an Open Access publication in order to spread the costs. For those like Dr Singh facing an urgent need to publish more because of institutional pressures or bureaucratic requirements (such as recognition as PhD

Supervisorship), this aspect of Open Access works well because the involvement of money expedites the process of publication: the process that usually takes one or two years to get published (or rejected for publication) shrinks to less than six months if the researchers go the Open Access way. However, given the prohibitive costs, especially for Indian researchers, Open Access ends up erecting doors rather than opening them.

Others committed to the cause of Open Access remain unfazed by publication metrics used by universities for career advancement. Prof Maya Dodd, Humanities and Languages at FLAME University in Pune, looks at Open Access not just in terms of what it does for researchers but the promise it holds for the public. She believes that Open Access is a measure that needs to be implemented as part of the larger movement to decolonise education as well as archives in India. Without it, there is no level playing field for new, solid research to emerge. With a lot of material relevant to Indian history and culture scattered to institutes such as the British Library, there needs to be more active championing of collaboration in India, something that cannot happen without Open Access becoming mainstream in Indian research. She points to the Netherlands and the State of California as regions that have effectively challenged the hegemony of private publishers by designing new Open Access publication models so that research coming out of these spaces finds strong and credible platforms for publications. Prof Dodd also points to the non-academic publishing scenario as a model to turn to: one can publish digital editions or paperback editions before publishing works as physical galleys or hardback editions. She finds it deplorable that India did not sign up for Coalition S, a sign that the Indian vision of research looks towards the west and its publishers for validation of its research.

The role of librarians has been instrumental in pushing for Open Access in India. They are the ones who critically evaluate the APCs model of Open Access (Madhan et. al., 2017; Arunachalam and Madhan, 2022). Muthu Madhan, Librarian at OP Jindal Global University, Sonipat, also involved with DST's Centre for Policy Research, suggests that librarians need to do more. So far, they have been pushing for the APC model, transferring the burden of financials to the researchers, and in some cases, to their funding agencies. He is optimistic about the future though while pointing out that institutions such as some IITs and IISc are coming up with interoperable repositories and communities such as organizations working in the medical sciences or in the agricultural sciences do have their own Open Access journals that do not charge APCs.

However, not all disciplines or disciplinary bodies in India have their own journals. What are the researchers in such disciplines to do? Anubha Sinha, who has been working on Open Access in India for close to a decade now, suggests that one possibility that can work at least in the short run until an official mandate arrives is that of self archiving (of older versions of draft article) or Green Open Access. While it sounds simple, it is very difficult to translate into action because of two reasons. One, not all publishers allow for Green Open Access. Two, even when they do, the researchers themselves are not aware of its possibilities.Sinha adds, The signing off on documents to handover one's copyright is such a long standing tradition that scholars do not read the fine print of what they are giving away and what they can still hold on to. Whether the One Nation, One Subscription becomes a reality or not, one must note that the policy would leave out those working in private institutions. These are institutions where the pressure to conduct and publish research is immense and not all universities provide their faculty members access to the electronic resources behind the paywall. Prof Subbiah Arunchalam who is with the Centre for Policy Research at DST is optimistic that community-led initiatives, the researchers' willingness to help each other can prevail over the paywalls erected by the publishing behemoths. Perhaps, Arunachalam's larger vision of cooperation is the only way to bring groups such as those employed with private universities into the fold of openness. As things stand, with rankings and promotions dependent on publishing output and, to some extent, citations, Open Access remains elusive.

Conclusion/Futures

Against the background of Open initiatives in the country, one can observe that Open is a concept that is being made sense of in different ways in India.

On the one hand, as observed with access to education, Openness does not require extensive lobbying anymore. With NPTEL or NDLI, the platforms for making basic knowledge available for the disadvantaged and for the lifelong learners seem to be in place. Secondly, it has also been an ideal to pursue in heritage, as visible in archival initiatives: public interest in GLAM initiatives testify to the same. Finally, its existence at the level of policy and spaces dedicated to public data through Open Data platforms is also some evidence of the openness with which the Open is being approached in the country.

On the other hand, Openness remains a misunderstood concept when it comes to making research available for consumption and collaboration. It is easier to campaign for knowledge and education in terms of access to schooling or education through the dissemination of learning materials such as textbooks and through the MOOCs. However, pushing for keeping research available in public domain to support collaboration, replication, and innovation is extremely challenging, to say the least.

However, building on the idea and the expressions of the Open that exist in India today requires domain-specific analyses for experts to deliberate upon and is beyond the scope of this study. What is attempted below is a set of reflections on the larger pursuit of Openness.

As mentioned above, platforms such as the SWAYAM or the NDLI exist to make education accessible to all. However, a lot remains to be done on the front of diversity and scale. One, the courses and learning materials need to be extended to minor domains such as Indian languages and other subjects that are regional in nature in terms of demand and relevance. This sense of striving towards linguistic diversity is important because access and openness do not mean much if they are perceived only in technological visions. That is, accessing information and education in languages that learners understand is also a necessity. The NEP 2020 insists on the incorporation of learning materials in Indian languages. There is a lot that can be done to improve non-English content on the platforms.

Two, a greater synergy among the individual platforms could be pursued. That is, existing ones as well as the new platforms (NPTEL, NDLI, SWAYAM or NPTEL), could be mapped to each other with the help of joint metadata and on the principles of interoperability. This can facilitate greater coordination between the states and the Center as they make their resources available for each other and the public. The discoverability of content gets enhanced with the learners exploring materials from a much wider pool of resources. Right now, such platforms operate in silos.

A parallel conversation to have along with the expansion of the reach and nature of educational resources is the nature of delivery, or its qualitative enhancement. To understand what resonates with the learners and why, the nature of OER deserves to be seen as an independent subject of research (Huitt and Monetti, 2017; Gurung, 2017; DeRosa and Robison, 2017; Diener, Diener and Diener, 2017; Wiley 2017).

In order to work towards leadership in knowledge creation, Indian academia also needs to supplement its Open approach from the dissemination of learning to sharing of research with a stronger push for Open Access. There is a need to rethink and facilitate Open Access beyond the model of Article Processing Charges.

This report spread its focus on the Open primarily in the space of GLAM, Open Data, Open Access, Open Source, and OERs. There are several other aspects that remain to be explored. For a much more strategic approach towards the promotion and implementation of the Open, India needs a monitoring and research space to undertake in-depth studies of different sectors such as FOSS, Open Data, Open Science, Open Innovation, Open Pedagogy, Open Medicine and so on. The Indian ecosystem also needs a platform-cum-repository-cum-curation space to collect information about the different Open projects in India, identify the areas that need uptake, and measure the nature of the impact of the live projects. There needs to be a tracking project for each of these domains: an international example for Open Access is the Harvard Open Access Project (HOAP) that undertakes research on Open Access and facilitates it. It is hoped that this study would be followed by several other specific surveys for more intensive engagements with the Open. The overview provided here is intended at addressing the need for a greater synergy between the governmental and non governmental initiatives and also to work for the larger cause of making Open a mainstream idea effectively embedded in systems and accessible to all by design rather than an idea pursued in different isolated zones existing in the periphery by only a niche group of interested researchers.

To return to the questions raised in the introduction of this study, the Open Movement is arguably still at a nascent stage. Since Openness is yet to be etched into social, legal, and intellectual ethos of governmental, educational, and research institutions, the next decade could be the right moment to follow up with systemic changes specific to different domains. Of all subdomains, OERs and Open Data hardly need lobbying. The great task before institutions and policy makers would perhaps be to expand their resources. Another is to make them more accessible with stronger metadata for search engine crawlers to lead users and seekers of information to the resources already available so that its usage base gets expanded. In contrast, Open Source and Open GLAM need some strategizing, given both the nation's diverse technological needs for application in businesses, education, and other sectors, and the linguistic and cultural diversity and histories that need preservation. Finally, Open Access requires a governmental or welfare-driven approach. With One Nation, One Subscription, whose draft version has its own limitations, it is the public funding that can emerge as a strong solution for access to research, and thereby enabling further innovation and collaboration. Financially speaking, it is too huge a problem to be addressed by civil society or volunteer projects.

Because each of these domains concerns researchers and academicians, there is a need for strategic interventions into awareness campaigns through Faculty Development Programs (FDPs), symposia, talks, roundtables, and so on to delink the idea of Open with predatoriness or incredible, and connect it with conversations around equity and accessibility. For very long, they have been on the receiving end of policies around terms of employment or career advancement schemes, and publish or perish cultures (without conducive environments and resources to conduct research). More dialogues among the

researchers' communities from varied disciplines through such fora can help them introspect whether they would like to contribute to the way Open as an idea shapes up in the country.

It is hoped that this study is followed up by rigorous projects in investigations and strategizing of individual Open domains while also exploring other aspects such as Open Medicine, Open Design, Open Pedagogy, or Open Maps.

While these broader visions of the Open in India are deliberated upon, here are a few thoughts for the CIS to reflect upon for its involvement in the Open ecosystem in the near future. The following are intended as suggestions to the Access to Knowledge team (along with other verticals) at CIS. In its attempt to stay committed to Openness, CIS could:

1. build on its work in the GLAM and Indic Wikimedia projects to explore Open as a larger project and idea, possibly by investing more resources into projects such as Open Science or Open Data and so on
2. facilitate interactions between public and volunteer projects for a stronger networked Open system across domains because as things stand today, the resources on, say, NDLI do not map with those on NPTEL, for instance
3. design a program or dashboard or structure that helps the Open community in India stay abreast of latest developments, initiatives and collaborations in the Open space
4. work with more educational institutions to spread awareness about Openness among faculty members, sensitizing them towards the need to contribute to it and also use it as a resource for teaching and research
5. take a deeper interest in minor or low resource languages such as Sindhi or the languages of Northeast India within CIS's engagement with Indic Wikipedias
6. initiate conversations about Open through workshops, roundtables or conferences for strategizing ways to define realistic ways of engaging with the Open and keeping the project sustainable as a whole
7. define ways to make conversations about Openness inclusive of the concerns of the HASS (humanities, arts, and social sciences) to complement the STEM or tech-heavy voices that dominate the discourse as of now

To reiterate, it is hoped that the above pointers would help CIS, along with those interested in Openness, think of devising and extending sustained forms of care towards Openness for the work in progress it remains.

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Bio notes

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