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Reassessing Impact: Implications of Technological Advancement in Developing Countries

Overview

As a blind high school student in India, my typical daily schedule included 3 hours of typing over 200 pages to convert printed material into accessible formats. Why can't I get softcopy of the textbooks that I can access using my screen reader? This was a question that I often asked various publishers, and got a single response, "technological advancement". With technology supporting instantaneous dissemination of information, publishers were afraid of misuse of virtual resources, and hence refused to provide me accessible E-books. The same technology that has facilitated communication and education impeded on my right to access printed material on an equal basis. Is it correct then to associate technological advancement with advancement in general? Is the vast growth in Information and Communication Technology truly a blessing for all?

As a regular user of technology, I am aware of and appreciate the innumerable benefits that technological innovations have brought about in the last two decades. From E-commerce to E-learning, from online petitions to virtual newsgroups, technology has undoubtedly permeated every aspect of our life. Like most other people, I too cannot think of a world without the internet and instant communication. In fact, I completely agree with the United Nations' Secretary General, Ban Ki-moon, who expressed boundless potential in technological innovations to curb all problems plaguing the world today. Unfortunately, however, these advances have been accompanied by their own share of challenges, often furthering the already sharp divide between `haves` and `have not`s throughout the globe. These

developments have also indirectly influenced other aspects such as equal access to education and governmental services.

In this paper, I will examine the implications of technological revolution in developing countries, discussing the challenges that it has brought about. Using India as an example, I focus on two important issues-impact of technological development on equal access to education, and accessibility of virtual content for the print disabled¹. After analyzing the problem, I present perspectives from various stakeholders. Subsequently, I discuss several solutions, including global co-operation, legal amendments, social empowerment, creation of new institutions and innovative projects etc.

Background

The technological era has had profound impact on almost all aspects of the society. Not all of this impact, however, has been positive. In several instances, it has resulted in rifts between different sections, while also causing serious challenges to the realization of the fundamental rights of many.

One of the biggest issues that have been impacted by technological surge is that of intellectual property and copyright. With the vast and immediate sharing of information over the web, several countries and international organizations have justifiably strengthened copyright norms to protect the rights of the publishers. While these laws fulfil their intended purpose, they also restrict access to copyright works for the majority of the population in developing countries who cannot afford textbooks. As a result, these laws have caused serious social problems, almost jeopardizing the right to education for many.

¹ Disabled in such a way as to be effectively unable to read print material, whether due to blindness, dyslexia, or another disability (<http://en.wiktionary.org/wiki/print-disabled>)

In fact, there have been several news stories recently highlighting challenges being faced by underprivileged students in developing countries to continue their education, owing to lack of textbooks (“Copyright Infringement Case Against Delhi University”). Several publishers have requested the governments to amend their copyright acts to curb widespread distribution of textbooks (often referred to as copyright exceptions). On the other hand, several institutions have approached international organizations such as the World Intellectual Property Organization, seeking amendments to the international law to allow for copyright exceptions in the interest of students (“SCCR26 to start next week in Geneva”).

Besides the underprivileged, the copyright laws have also negatively impacted the print disabled. Over the years, it has become increasingly difficult to share copyrighted textbooks in accessible formats, thanks to restrictions on cross-border sharing of material (Catherine). This has led to non-availability of textual material in accessible formats. According to an informal survey that I posted on Access India², a mailing list with over 3000 blind subscribers, less than 35% of the print disabled students in India have access to some textual material in accessible formats.

It is evident from the above situation that information and communication technology is not synonymous with advancement for several sections of our society. Various problems have emerged that require immediate attention to ensure equal access and equal opportunity for all. The next section discusses one such problem, i.e. the influence of technological developments on access to education.

Technological developments and access to education

² Access India is a mailing lists that promotes blind people from across India to come together and discuss issues such as technological accessibility and disability laws. The mailing list is in its 14th year now, and has over 3000 blind subscribers from different walks of life.

To analyze the impact of technological advances on access to education, this section uses the recent developments in India as a case study.

Recent developments in India

Given the immense poverty in India and the challenge in procuring original textbooks, faculty members in universities often compile excerpts from copyrighted textbooks (known as course packs) and distribute them among the students. In late 2012, leading publishing houses including Oxford University Press and Cambridge University Press brought a copyright action against Delhi University (one of the largest and most diverse universities in India) and a tiny photocopy shop licensed by it, seeking to restrain them from supplying educational course packs to students. They cited distribution of these course packs to be against the spirit of the International Copyright Law (Liang).

Interestingly, the Indian legislators realized the socioeconomic disparities in the country as they drafted the Indian Copyright Act in 1957, and incorporated provisions to ensure access to textbooks for all irrespective of economic status. Section 52(1) (a) of the Act permits any fair dealing of a copyrighted work for the purpose of research and private study. In addition, the section embodies a separate exception, under which it is legal to reproduce any copyrighted work during the course of educational instruction (“The Copyright Act of 1957”). These exceptions reinforce a clear Parliamentary intention to exempt core aspects of education from the sphere of copyright infringement.

Realizing these provisions in the Indian law, the publishers demanded amendments to the Indian Copyright Act, curtailing the free distribution of content from copyrighted works. Reinforcing the monetary losses to them, the Cambridge University Press suggested the United States Copyright Act as a model, which allows for a maximum of 10% of the content

to be reproduced for educational purposes (Basheer; “The Copyright Law of the United States of America).

While the U.S. law may be appealing to the publishers, its adoption in India has several demerits. As the Constitution of India envisages, the law of the country must always reflect the aspirations and socioeconomic situation of the citizens. Further, there is great disparity in the economic situation in India and the United States, confirmed by GDP rankings (U.S. ranks 1, while India ranks 12th). Statistics on poverty from the World Bank also corroborate this point, revealing over 68.7% of India's population living under US\$2/day (“Poverty and Equity Data|India”). Further, Delhi University boasts of diversity, educating a large number of students from the north-eastern states of the country (which have very high poverty rates). The university profile further reveals a sharp variation in the socioeconomic background of the student body (Singh). Capping maximum production at 10% may, therefore, compel thousands of students to drop out of colleges.

To further support this argument, Prof. Shamnad Basheer at NUJS, Kolkata conducted an empirical study to evaluate the potential impact of changes to the copyright law. He concluded that a vast majority of popular legal and social science titles have no corresponding Indian editions and need to be purchased at rates equivalent to or higher than in the West. Given the disparity between INR-USD, these prices turn out to be skyrocketing. Should the production of course packs be halted, he estimates over 60% of the Delhi University students to be impacted negatively. It is, therefore, clear that any changes to the current copyright norms will adversely impact a large number of students, threatening their right to education.

At the same time, it is crucial to understand the perspective of the publishers. "We are not charity houses, and have paid the authors for the content. Also, a lot of money goes in printing and distribution. We can certainly not give away textbooks for free," argues Ratnesh

Kumar Jha, Managing Director of Cambridge University Press, India, while demanding legal amendments (“Copyright Infringement Case Against Delhi University”). Another spokesperson for Oxford University Press emphasised the need to evolve a licensing scheme (Leigh). Unfortunately, the stipulated license fee is rather high for a small photocopying shop to afford.

Under these circumstances, it is vital to examine solutions that can protect the rights of the publishers, while not compromising on the fundamental right to education.

Solutions

The most important and definitive source in an argument is the law. It is, therefore, necessary to evaluate the current legal framework and ensure that it provides for reasonable copyright exceptions. The Bern Convention is widely regarded as the International Copyright Law. As it stands today, this convention does not clearly lay down any provisions regarding copyright exceptions. At the same time, it does not prohibit distribution of textbooks for educational purposes. Instead, it leaves it upto the discretion of the member states to frame their own laws on the issue. As a result, different countries have adopted very different laws. to ensure a balance between the interest of the publishers and the consumers, and to standardize law, it is essential that the World Intellectual Property Organization convenes the member states to deliberate a model incorporating a balance between all parties. Susan Isiko Strba, in her book *International Copyright Law and Access to Education in Developing Countries: Exploring Multilateral Legal and Quasi Legal Solutions*, expresses similar ideas, and calls for a better balance internationally. She places a lot of hope in what can be accomplished through the WIPO Development Agenda and the Standing Committee on Copyright and Related Rights (SCCR). For her, these tools could lead in the long run to the

establishment of a soft law instrument or institutional reform putting the copyright regime more on track with educational needs.

Besides legal amendments, it is essential to monitor implementation of copyright exceptions. Unfortunately, no effective institution exists in India at present to achieve this purpose. Accordingly, I propose the creation of a Copyright Clearance Center (CCC)³ similar to that in the United States, with the mandate of authorizing various institutions to make photocopies of any registered title for internal use as well as for commercial use like course materials, handouts at seminars etc. To ensure minimal losses to the publishers, the clearance center can stipulate an annual subscription fee in consultation with the University Grants Commission⁴. The collaboration with UGC is important here to avoid the situation in New Zealand where the license fee has been dramatically increased, making it difficult for the universities to pay (Lewis). Given the importance of education, the Indian Government should also consider allocating more funds for education in the Five Year National Economic Plans.

Another innovative solution is expanding the current knowledge dissemination programs offered by the Govt. of India. Gyaan Vani is an educational radio channel that reaches out to several villages and cities across the country. However, as per statistics from the Netaji Subhas Open University, very few relevant educational programs are aired on this station, and little has been done to expand the service. The Government should consider collaborating with leading universities in the country and even publishing houses (for content)

³ Founded in 1978 as a not-for-profit organization, CCC provides smart solutions that simplify the access and licensing of content. These solutions let businesses and academic institutions quickly get permission to share copyright-protected materials, while compensating publishers and creators for the use of their works. (<http://copyright.com>)

⁴ The University Grants Commission (UGC) of India is a statutory organisation set up by the Union government in 1956, charged with coordination, determination and maintenance of standards of university education. It provides recognition to universities in India, and disburses funds to such recognized universities and colleges. ([http://en.wikipedia.org/wiki/University_Grants_Commission_\(India\)](http://en.wikipedia.org/wiki/University_Grants_Commission_(India)))

to plan out a curriculum for varied audiences, and expanding the current educational setup to reach out to an even wider population.

While these solutions can effectively address challenges experienced by the economically weaker strata of the society, there is yet another group that faces several challenges due to the Copyright Act. The next section discusses the problems faced by the print disabled students due to technological advancements (and hence, changes in the Copyright Act).

Accessibility of virtual content for the print disabled

As the copyright laws have been amended to reflect the digital advances over the last decade, thousands of disabled students (particularly those who are print impaired) across the globe have struggled to access books. The international copyright law prohibits cross-border sharing of copyrighted works. Unfortunately, this implies that any textbook converted into accessible formats after considerable effort cannot be shared with an individual in another country. In addition, very few countries possess the technology to convert textbooks in accessible formats. As per Mr. Prashant Verma of the Daisy Forum of India⁵, only four schools working for the blind in India own OCR software⁶ and embossers. Publishers are generally unwilling to share digital versions of their textbooks, copyright being the reason. This paucity of textbooks has led to a large number of students dropping out of school.

According to Nirmita Narasimhan, policy director with the Center for Internet and Society, India, the situation is extremely deplorable. "Several students want to study, want to fulfil their aspirations, but lack the resources to do so. Publishers just don't want to co-

⁵ The DAISY Forum of India is a group of blind schools in India that are involved in conversion of material into accessible formats.

⁶ OCR (Optical Character Recognition) software include software used for conversion of print textbooks into accessible E-books that can be accessed by people with print disabilities using a screen reader (a program which reads out the content on the computer monitor)

operate." (Catherine) Echoing the situation, Mr. Dipendra Manocha, technical head, DAISY India, reinforces the effort that goes into conversion of a textbook in accessible formats.

"Only if the publishers could provide digital copies of their textbooks could we produce more textbooks. Currently, we have to start from scratch, and hence, it takes up a lot of time. If we want our students to get education, we need the copyright laws to change soon." (Catherine) It is, therefore, clear that for the situation to improve, we require the publishers to co-operate with institutions working for the blind.

Fortunately, there have been some recent positive developments that can potentially end what one author has rightfully called `book famine`. In June last year, an international treaty was adopted at Marrakesh that permits international distribution of accessible material. It also calls for co-operation from publishers and authors ("Marrakesh Treaty to Facilitate Access to Published Works for Persons Who Are Blind, Visually Impaired or Otherwise Print Disabled"). Within India too, there have been some success stories. Preparing for the entrance exams to prestigious business schools in the country, a group of visually challenged students in Bangalore, India contacted the well-known educational publisher Pearson Education and requested that they publish their material in an accessible format. Pearson agreed and has since then made much of their material available for the visually challenged (Jain). Disability activists have also been successful in their efforts to secure amendments to the Indian Copyright law to allow for conversion of material to accessible formats (Pandey).

However, we must realize that mere legislation does not address this problem. Unfortunately, there has been very little, if any, implementation of these laws. Very few countries have ratified the international convention, and the publishers continue to be reluctant to provide textbooks (citing misuse of virtual resources as their primary concern). It is, therefore, critical to examine alternative suggestions that can ensure wider access to accessible material.

Solutions

According to me, the key issue is the lack of trust between the publishers and institutions working for the blind. Despite the necessary legal framework, it seems to be difficult for the publishers to be guaranteed no misuse of the electronic versions of their textbooks. To address this, a model similar to the one adopted by several European countries may be adopted. Under this model, a committee with representation from the publishers monitors all alternate format requests, and ensures no misuse of virtual resources. Further, it requires the consumer to purchase the print version of the textbooks to receive an alternate accessible version. The Chafee Amendment to the United States code also envisages similar ideas. Such an institution can indeed help garner support from the publishers.

Further, as Mr. Manocha puts it, conversion of material into accessible formats is rather daunting. It becomes essential then that the effort in such a conversion is not wasted, and that previously converted textbooks are made widely available after due purchase of the standard version. While the Marrakesh Treaty facilitates this distribution legally, it is unfortunate that very few countries have ratified it so far, rendering it useless. I urge international bodies and governments to adopt measures to promote interest in this treaty, helping to bring an end to the `book famine`.

Another initiative that can bring about a positive difference is the Bookshare Project⁷. Operating as a part of the Benetech non-profit in Silicon Valley, it is the largest virtual library of accessible books in the world. It not only provides books in varied accessible formats, but also caters to a wide range of readers. It currently offers textbooks in over 20 languages, including English, French, German, Hindi, Tamil, Chinese etc. different organizations

⁷ The Bookshare Project is the largest virtual repository of accessible E-books in the world. It relies on several institutions working for the blind throughout the globe to upload their converted accessible textbooks onto a common website that can be accessed by anyone with a print disability. This helps to avoid reconversion of a textbook already converted to accessible formats.

working for the blind across the globe should consider collaborating with Bookshare to further expand their collection, allowing any print disabled person from across the globe to access any book. Different countries might also want to establish similar local virtual repositories to better address the needs of its citizens.

Conclusion

It is evident that technological development has had complex repercussions on our society. While we cannot undermine its importance, it has also resulted in serious socioeconomic problems. The challenges discussed in this paper are two of the many grave problems that the digital age has brought about, impacting thousands of young students.

Recently, while interacting with participants from Guyana as a part of the UNICEF's Global Partnership on Children with Disabilities, I was appalled to learn that less than 1% of disabled students in the country get to access higher education. According to Ivory Donella Duncan, a young blind student who dropped out of school this year, the most important reason cited by the local school is the lack of interest among blind students. "This is far from true. We never get any textbooks in time, and so, there is no way we can study. There is no technology that can facilitate conversion of textbooks into accessible formats, and volunteers are hard to find," recalls Ivory. It is, therefore, evident that the problems discussed in the paper are indeed global problems, demanding thoughtful consideration and immediate action.

Given the legalities involved, most of the suggestions proposed in the paper require concerted efforts from various governmental organizations. Besides, international bodies have an important role to play to help member states reach mutually acceptable provisions. History is a testimony to the benefits of global co-operation. It goes without saying then that global co-operation and sharing is perhaps the most effective solution to all the problems discussed above.

Also required is a shift from a passive to a more active role for local institutions and non-governmental organizations. As is clear from the situation in Guyana, local institutions often complain about lack of resources, citing the inefficiency of the system as an excuse for the dismal situation. To mitigate these problems, it is crucial that all organizations and institutions collaborate and co-operate with each other, rather than simply levelling accusations.

At the same time, it is important that all of us, as responsible global citizens, take it upon ourselves to contribute towards bringing about a positive change. By this, I do not mean participation in core deliberation committees. Instead, I'm referring to advocacy efforts to help institutions understand the gravity of the situation, and accordingly take measures that strike a balance between socioeconomic empowerment and intellectual property rights. We may not realize it, but each one of us can indeed add to help address these problems-the student group from Bangalore is the case in point here.

These solutions, if implemented, can indeed help achieve the United Nations Millennium Development Goals. More importantly, it can help thousands of Ivory's across the globe access education on an equal basis, thereby reducing the divide that exists today.

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