

# **WORK PROFILE OF XRCVC**

**(September 2003 to May 2020)**



### Background

St. Xavier's College, Mumbai has had a long tradition of working towards equitable education. Aiming to achieve excellence in education, the institution has always ensured that the benefits of high quality education are enjoyed by all strata of society. Keeping with the values of equitable, inclusive education St. Xavier's College has set an example in the field of inclusive education for persons with disabilities through its one-of-its-kind department – the Xavier's Resource Centre for the Visually Challenged (XRCVC). The department was set up in September 2003 and upgraded in November 2005, and has come a long way as a true example to demonstrate that, with the right motivation, inclusive education can be made a reality in India. It has also further demonstrated the immense value an educational institute can have through expanding its reach beyond its campus and play a key role in nation-building through its advocacy and networking initiatives.

From April 2006, the XRCVC has actively taken on the challenge of building inclusive systems through its advocacy work, which is rooted in **research, consultancy work** and an **extension focus**.

Following is an account of work undertaken by the XRCVC since its inception in the academic year of 2003-2004 till May 2020.

### The Spectrum of Work

XRCVC, a department of the college, has three main verticals of work.

1. Direct Support and Training Initiatives (*Data compiled for the period September 2003 – May 31, 2020*)
2. Advocacy Initiatives
3. Awareness Initiatives

Through these three main areas of work, the XRCVC balances its micro and macro level initiatives to work towards creating an enabling environment to facilitate the development of an inclusive society.

Many of these verticals have an active consultancy dimension, in that the XRCVC's expertise is called upon by individuals, organisations (be they educational or corporate) as also governmental agencies to help build inclusive systems.

In addition, the XRCVC believes in providing its expertise well beyond the campus — locally, regionally and nationally.



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Its initiatives through its extension work — be it awareness or research-based work — has resulted in effective outcomes with various stakeholders. The XRCVC’s activities have been largely funded through project-related support by various individuals, foundations and corporates. Some major funders over the years include:

- Sightsavers
- Tech Mahindra Foundation
- Sir Ratan Tata Trust
- SAP India
- Johnson & Johnson
- Dhun Pestonji Parakh Discretionary Trust
- Nergesh Khurshedji Dady Public Charitable Trust
- HDFC
- Tata Capital Housing Finance Ltd
- Great Eastern CSR Foundation
- Samruddha Resources Ltd

St. Xavier’s College has also received funds through the UGC’s HEPSN scheme in the 10th and 11th plan period. The XRCVC has served as the “enabling unit” for the scheme.

Over the years, XRCVC has displayed remarkable alacrity in adapting to changing situations and converting challenges into opportunities. A recent example was when the Corona pandemic struck globally in 2020. When the Academic Year 2019-20 began as usual on a sedate note in June 2019, nobody imagined the dramatic manner in which it would come to a close. By May 2020, the scourge of COVID-19 had brought the world to its knees, with most parts of the world including India locked down for weeks on end. It was a sudden announcement and nobody had the time or luxury to prepare for such an abrupt lockdown. Neither did XRCVC.

At the Xavier’s Resource Centre for the Visually Challenged (XRCVC), however, a decision was taken early that this challenge should be met head on in the only way the Centre knew — by hunkering down and renewing its efforts to foster inclusion, in good times and bad.

Anticipating a lockdown scenario, the XRCVC team changed its mode of functioning and adopted a work-from-home approach. Expecting an extended lockdown period, the team was proactive and planned the shift from working from the work spot to working from home in great detail. Each team member had a planned quota of work assigned, and, looking back, XRCVC is happy to share that the lockdown period at the Centre was as productive as any of the months that preceded it. Yes, this shift meant that the team members’ face-to-face interaction with stakeholders was replaced by a virtual interaction. However, the Centre’s training programmes, content-creation and other activities continued with renewed vigour.



Among the first initiatives the Centre undertook during the lockdown was to compile a document titled 'Recreational Resources and Safety Guidelines for Persons with Blindness and Low Vision during the Lockdown'. This was circulated widely across the country and proved to be a key resource guide for visually impaired persons all over the country during this difficult time.

Following is a detailed account of work across these key areas.

### I. DIRECT SUPPORT AND TRAINING INITIATIVES

XRCVC provides a range of support services to students of St. Xavier's College as well as to visually impaired persons across the city and country who register as XRCVC members. The services are provided at no-cost basis. Across the years, the figures for students with disabilities, and over and above that the total XRCVC membership, are as follows

**Table 01: Profile of students with disabilities studying at St. Xavier's College, Mumbai from academic year 2003 – 04**

Sr. No	Academic Year	Blind / Low vision	Orthopedic disability	Hearing impaired	Learning Disability	Total students with disabilities in college
1	2019-20	117 (including students with blindness, low vision, orthopaedic disabilities, learning disabilities, hearing impairment, cerebral palsy, and autism spectrum disorder)				
2	2018-19	110 (including students with blindness, low vision, orthopaedic disabilities, learning disabilities, hearing impairment, cerebral palsy, and autism spectrum disorder)				
3	2017-18	110 (including students with blindness, low vision, orthopaedic disabilities, learning disabilities, hearing impairment, cerebral palsy, and autism spectrum disorder)				
4	2016-17	18	4	1	46	69
5	2015-16	21	-	2	32	55
6	2014-15	24	2	-	17	42
7	2013 -14	27	2	1	17	47
8	2012 -13	24	1	1	17*provisional	43
9	2011-12	24	1	1	24	50
10	2010-11	24	1	2	22	49
11	2009-10	26	1	2	26	55
12	2008-09	24	2	1	19	46
13	2007-08	18	1	0	23	42
14	2006 - 07	18	NA	NA	NA	18
15	2005 - 06	19	NA	NA	NA	19
16	2004 - 05	12	NA	NA	NA	12
17	2003- 04	4	NA	NA	NA	4

*Number of visually challenged students is inclusive of both junior and senior college.*



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*Data for orthopaedic, learning disabled and hearing impaired for junior and senior college up to 2006 – 07 and junior college prior to that is not available at the XRCVC.*

**Table 2: Number of XRCVC members over the years from academic year 2003 – 04**

2003-04	4
2004-05	12
2005-06	19
2006-07	20
2007-08	30
2008-09	76
2009-10	130
2010-11	165
2011-12	211
2012-13	296
2013-14	338
2014-15	509
2015-16	508
2016-17	587
2017-18	651
2018-19	678
2019-20	693

XRCVC provides a range of services for its members. These include the following:

**Assistive Technology Support and Testing (AT):** XRCVC is a one-of-its-kind assistive technology resource centre. Persons with visual impairment, families, caregivers, employers, government bodies and any other stakeholders can get a firsthand experience of which products to use, understand technology, or undertake accessibility testing of products. The range of access technology at the XRCVC is kept up-to-date both in terms of hardware and software at international levels. Our AT list includes screen readers, magnifiers, Optical Character Recognition (OCR) systems, refreshable Braille systems, low vision aids, Accessible instruments to conduct scientific experiments, other daily use appliances, and much more.

XRCVC also conducts AT orientation workshops and seminars for a wide group of persons to spread awareness about the available AT.



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**Table 03: Number of beneficiaries at the Access Technology orientation workshops and seminars from academic year 2006 – 07**

2006-07	9
2007-08	43
2008-09	360
2009-10	213
2010-11	100
2011-12	579
2012-13	1320*
2013-14	532
2014-15	531
2015-16	510
2016-17	978**
2017-18	919**
2018-19	1496
2019-20	1289*

\*Includes the number of participants who have attended and benefitted from the Reading Without Seeing workshops.

\*\*Includes the number of participants who have attended and benefitted from Education including Maths and Science Support, and Computer & Assistive Technology

In addition, since 2012 – 2013, the XRCVC has launched an active extension focus by reaching out to potential users and other stake holders by conducting one- to one-and-a-half day workshops entitled 'Reading Without Seeing'. These workshops expose the participants to diverse Access Technologies and give them a hands-on feel into their usage and capabilities. Keeping an extension focus in mind, these workshops are conducted across different locations in India. The XRCVC has conducted 91 such workshops so far, covering 2960 participants, in collaboration with other organisations.



**Participants at a mobile training workshop conducted at XRCVC in May 2012**



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Over the years, XRCVC has also been involved in a range of **Accessibility testing** initiatives for varied products and services to ensure that the same can be accessed by the visually impaired. Some of the key products and services tested by the XRCVC include the following:

1. XRCVC members visited CSIO, Chandigarh to test their indigenously built hand-held reading device. Our team provided the chief researcher Dr. Sardana with improvement feedback which is to be worked upon to further improve the device.
2. Open source IBM accessibility works – a web browser tool for low-vision and partially sighted persons.
3. Buddy (A DAISY Player): Testing of the newer version of the player for user issues for the same to be reported to the developers. DAISY is an acronym for Digitally Accessible Information System. It provides print-impaired persons an effective reading experience to smoothly navigate a book on a computer, mobile phone or dedicated hardware device.
4. Minitab and SPSS (Statistical software programmes): As various visually impaired students pursue MBA and Statistics courses they need to use mainstream statistical programmes for their studies and work. The XRCVC tested the said programmes for their accessibility with JAWS (the screen reader) and gave feedback to users for more efficient use.
5. Work on Dolphin Publisher and Plextalk DAISY recorder.
6. The XRCVC has also conducted testing of accessibility features of the Standard Chartered Bank Website (url: <http://www.standardchartered.co.in/>) to check for its compatibility with screen readers.
7. The XRCVC also conducted web accessibility testing for SBI for a net banking portal for the visually challenged.
8. Testing of I-Ball Click Scan camera scanner for its OCR functionality and accessibility for the blind
9. Testing of Enable India's spelling tool, Testing of C-DAC's Marathi TTS
10. Analysis of new Text to Speech software – aSpeech – from Akshara Speech Technologies, Chennai.
11. Conducted tests on the Bala Bolka – a Text to Speech programme and on the OBL 2.0 version.
12. Worked with SAP labs on accessibility of varied SAP products
13. Testing of accessibility of Inclusive Planet, IPA solution for www.monster.com
14. Tested the software Tally for its compatibility with JAWS.
15. Accessibility testing of the soft phone program at the IBM-IIFL thane call centre as requested by Enable India, Bangalore. This will benefit employees with visual impairment to be employed at this organization.
16. Tested the accessibility of CRM package with jaws at Childline, Vikhroli, also on behalf of Enable India.
17. Checked the accessibility of the E-book reader program QReader.



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18. Met with officials from Abacus India to know more about the various systems that this organisation works with to create accessible systems in mobile phone technology, talking pens, other security measures, etc.
19. Scanned SBI passbooks with Zoomex scanner for Enable India's SBI project. This report was then forwarded to the team at Enable India in Bangalore.
20. Testing of ORCA – Linux based screen reader in partnership with CDAC.
21. Testing of Linux based – Ubuntu, HV Pro, Connexus Buddy to check for their accessibility features.
22. The XRCVC has also acquired a Samsung CE117ADV-B microwave oven that has speech output for some of its functions. Although the unit can be further developed to make it a truly accessible one for people with visual impairment, the XRCVC has been studying its various features and testing the same.
23. Conducted intensive field trials for a Smartcane developed by IIT Delhi and Saksham Trust, New Delhi.
24. Conducted accessibility testing of the Rehabilitation Council of India website (url: <http://www.rehabcouncil.nic.in/>) and the Bombay High Court website (url: <http://bombayhighcourt.nic.in/>) for their compatibility with screen readers.
25. Research and development of accessible signages and floor plans.
26. Research into combinational printing technology using sighted text and Braille on the same sheet.
27. Tested an open source Hindi Text-to-Speech (TTS) software 'Manasi' and provided feedback on the same.
28. Tested Microsoft's Windows phones for accessibility features using a tester panel comprising both experienced testers and amateur users, and gave feedback by way of thorough test case scenarios as also overall impression-based thoughts.
29. Tested text-to-speech softwares like the Flite App for Android, and the websites of Tech Mahindra and Jet Airways for accessibility.
30. Test model of Daisy online library on stream.
31. Worked on pilot testing of location identification signages called Beacons. The plan is to have a Mobile Application in place for indoor navigation and identification for blind users. Also coordinated with a firm called NWBT on installing Beacons at Mumbai airport, and worked with a few engineering students on their Beacon navigation project and indoor navigation device.
32. Worked closely with Amazon in Bangalore to discuss accessibility and other feature enhancements of the company's Echo devices.
33. In 2018, XRCVC, with the support of Sightsavers, launched Project Access—Sightsavers-XRCVC initiative, which focuses on testing accessibility across devices, platforms, and companies. As part of this project, the XRCVC team held multiple meetings with Reliance officials to make the Reliance Jio offering accessible.



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34. During the year 2019-20, XRCVC tested the following devices / software for accessibility: M Indicator at MI Mix 2, Redmi 6 Pro, Moto E 4g, Oakter, Google calendar, XIC website, E notice Board, Narrator with Windows 10, Realme 3, Google Maps with Talkback, CSMVS website, S3 frontier smartwatch, Sound amplifier for hearing impaired, Microsoft Edge, Kibo App, Mumbai Weather Live, Skymet Weather, M-Indicator, Mumbai police website, Libre 6.2, web NCERT, Balbharti, NROER, CBSE and App Epathshala, Diksha, FB reader android app, BEST Bus indicator App, Samsung A70, UTS App, VU TV, UPI App, Money Manager, MiTV, Redmi 8, Saktek website, Audacity, Ola App, Envision Smart Glass, EVO E10 Daisy Player, Google Assistant, Envision, XL Cinema, Onida Fire TV, Moto G, Samsung M10, Supersense App, BEST Prawas App, Kindle for PC.



**The XRCVC conducted intensive field trials in October 2013 for a Smartcane developed by IIT Delhi and Saksham Trust, New Delhi**

- **Support Training:** XRCVC provides Computer, Assistive Technology, Braille, Orientation & Mobility (O&M) and English language training programmes for varied learner groups – visually impaired persons, special educators, teacher trainers and caregivers.



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**Table 04: Support Training activities conducted by XRCVC from academic year 2006 – 07**

Year	Computer	English	Braille	O&M (Orientation & Mobility)	Life Skills
2006-07	9	15	NA	3	NA
2007-08	39	15	NA	NA	NA
2008-09	34	18	NA	NA	NA
2009-10	79	25	NA	NA	NA
2010-11	69	18	NA	NA	NA
2011-12	51	12	1	2	NA
2012-13	49	24	NA	16	5
2013-14	38	17	4	22	5
2014-15	109	13	NA	327	NA
2015-16	260	16	NA	8	-
2016-17	309	16	NA	23	8
2017-18	233	19	NA	3	-
2018-19	196	10	NA	27	8
2019-20	1289 beneficiaries [includes Direct Training: Computer & Assistive Technology (AT), Direct Training: Education Support (Including Mathematics & Maths for Competitive Exams, Science, Concept Enrichment, English, Braille, Orientation & Mobility, Activities of Daily Living, Life Skills, Remediation Support for Students With Learning Disabilities), Guidance Support (including Phone Support and Maths Support), Direct Training: Inclusion Cell, and Indirect Stakeholder Training]				

The XRCVC has conducted a Certificate programme in Access Technologies for the Visually Challenged at the Intermediate and Advanced levels.

- **Volunteer Support:** XRCVC provides volunteers to its members for varied tasks – scanning, editing, reading, teaching, etc, as the need may be. The centre garners the volunteer pool mainly from the St. Xavier’s College’s Social Involvement Program (S.I.P)

Each year we manage a large volunteer base to meet member needs. These volunteers work with members who may be students at St. Xavier’s College, or those studying / working elsewhere in the city. This experience itself serves as an effective awareness tool. The registered members at the XRCVC across the past few years are:



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**Table 05: Number of volunteers at the XRCVC over the years from academic year 2003 – 04\***

2003-04	12
2004-05	36
2005-06	57
2006-07	50
2007-08	70
2008-09	161
2009-10	160
2010-11	117
2011-12	127
2012-13	91
2013-14 (updated up to April 30)	132
2014-15	108
2015-16	80
2016-17	117
2017-18	103*
2018-19	96*
2019-20	127*

\*This includes interns.

- **Personal and Career Guidance:** XRCVC provides personal and family guidance services to help individuals and families develop the right attitude and support to work with visual impairment. In addition the XRCVC also provides career guidance.
- **Accessible Content Creation (Braille, Audio, Scanning & Editing) & E-Library:** In the effort to create accessible material for the print disabled, the XRCVC has been actively involved in DAISY content creation, as also meeting individual content needs, from time to time. Since the academic year 2007-08, the XRCVC has created a total of 686 titles across various subjects and streams of education. In addition, the centre has converted thousands of pages on request into computer readable format, Braille and audio. This it has done for its members be they Xavierites or non-Xavierites. The content so created is thus available to a much wider pool of potential users.
- **Recreation & Sports:** XRCVC has strongly advocated for holistic development as a key to inclusive societies. In order to stretch the boundary of support from being merely educational the centre has created a space for overall growth of its members. In order to achieve this XRCVC has been actively involved in recreation and sports events involving persons with visual disabilities. The XRCVC has organised cricket and football tournaments and training sessions for visually impaired students of the college. It has also launched a fitness programme for its members in collaboration with the Sports Director of St Xavier's College. These activities are conducted under the aegis of the XRCVC Sports & Recreation Club.



**Action at the Xavier's first Invitational Football Tournament for the Visually Challenged, which was conducted in January – February 2013**

The Xavier's first Invitational Football Tournament for the Visually Challenged was conducted in January – February 2013. Four teams from across the country played against each other. It was an enriching experience for all the players who participated in this tournament and also for the spectators who were watching a match like this for the first time in the city of Mumbai. One of our members also participated in a national level training and selection camp for football.

Our members also participated in a number of cricket tournaments held across Mumbai for people with visual impairment.

- **Scholarships and AT Loan Schemes:** Whilst technology has advanced to bridge the divide of education and access for the visually impaired, the same is yet not available at affordable costs. In order to ensure that finances do not become a hindrance for visually impaired students, the XRCVC runs scholarship programs as also Assistive Technology Loan schemes.

The XRCVC ran a higher education scholarship programme in partnership with Tech Mahindra which benefited a total of 52 students over six years. These recipients were selected from applications sent in by visually challenged students from across the country. In addition, the XRCVC runs a scholarship with the Lions Club of East Mumbai which has benefited 12 students through the years.

The XRCVC loans out computers and laptops to needy visually impaired students and has benefited over 130 students through the years.



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**Dr Sam Taraporevala awarding the Tech Mahindra scholarship 2014 cheque to a recipient**

- **St. Xavier's / XRCVC Alumni:** Over 70 students who were part of the XRCVC have graduated since June 2006. Of these nearly half have either completed or are involved in a post graduate programme. One of XRCVC's students, Pranjal Patil, went on to create history by becoming one of the first women with visual impairment to clear the Indian Civil Services examination. She is now posted as Assistant Collector (under training) in Ernakulam (Kerala). Another student, Dr Kritika Purohit, went on to become the first person with visual impairment to become a certified physiotherapist with a degree from Maharashtra University of Health Sciences (MUHS). Some of our students have enrolled for doctoral programmes as well. The post-graduate programmes include M.A. in Social Work and M.A. in Human Resource Management and Labour Relations from TISS, MA's from Mumbai University and Pune University, an MBA from SCMHRD (Symbiosis, Pune) and Jamnalal Bajaj Institute of Management, Mumbai, an M.A. from JNU, Delhi in International Relations, English Literature, History and Political Science, MSc in Statistics from University of Pune, MSc in Development Economics from SOAS University, U.K., M.A. in Economics from Gokhale Institute of Politics and Economics, Pune, L.L.B from University of Mumbai, 2-year P.G. Diploma in Museology from the National Museum Institute, New Delhi, M.Phil in Political Science and Ph.D. in English Literature from JNU, New Delhi, part of the Gandhi Fellowship, pursuing an MBA degree at one of the premier Management courses, Masters in Pali. Others have been employed at various firms across the city and country.
- In 2017-18, St Xavier's College (autonomous) formally launched all the support services of its Enabling Committee right through the year. At the forefront of this initiative was the Xavier's Resource Centre for the Visually Challenged (XRCVC) ([www.xrcvc.org](http://www.xrcvc.org)), which, since 2003, has been actively espousing the cause of visual impairment, and this year expanded its scope to formally include students with other disabilities like autism, learning disabilities, orthopaedic disabilities, and hearing and speech impairment, as well.



### ADVOCACY INITIATIVES: APPLYING RESEARCH TO PRACTICE

In addition to providing direct support services, the XRCVC has used its research skills to create effective models of advocacy to promote access for persons with disabilities in various strata of life. Each of the advocacy efforts has been backed with sound research and situational analysis to understand the key issue at hand, find international or local models of replicability in case they exist, or create models through consolidated networking to effect change to address the issue at hand. The XRCVC strongly believes in action-oriented policy-linked research rather than mere academic research with no grounding in effecting social change that could promote inclusion.

The XRCVC has worked in this area of action-oriented research through its various projects, primarily Project Access, which has been funded by 'Sightsavers', an international development agency working in the field of blindness control and social inclusion. The XRCVC thus is working at the local, regional and national levels by providing its expertise and facilitating transformation both at the micro and macro levels.



**The XRCVC worked closely with the BEST, IIT Delhi and Mumbai First in April 2015 to test OnBoard, globally a first-of-its-kind device that facilitates boarding of public buses by visually impaired persons**

The key issues worked on through these research and advocacy initiatives have been the following:



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- **Print Access:** For persons with print disabilities, accessing sighted print poses a challenge. The information barrier created by this often creates hurdles in education, employment, leisure, etc. The vision of this initiative is to ensure equal access to printed works in alternative formats for persons with print disabilities. XRCVC's achievements in this area have been:
  1. Played a pivotal role in suitably changing the Copyright Law of India. The Copyright Amendment Bill 2012 was passed by both houses of Parliament in May 2012 and has also been signed by the President of India.
  2. Involved with giving inputs to the World Intellectual Property Organization (WIPO) through the Government of India to build an inclusive global treaty for ensuring print access to the blind. India has subsequently signed and ratified the instrument.
  3. Worked at building library and dissemination systems at the national level by being a primary member of the DAISY Forum of India (DFI), an umbrella body of over 95 organizations working for the blind and print impaired persons across the country. For more information see [www.daisyindia.org](http://www.daisyindia.org). This was also done for Bookshare.org the world's largest online special library for print impaired persons. The XRCVC played a critical role in Bookshare opening up to members from India in October 2008. It is one of the few organisations in India which is recognised to screen new members.
  4. XRCVC also worked towards the launch of, and aggregating content, for, Sugamya Pustakalaya, a national online repository of accessible books which was launched in Vigyan Bhavan, Delhi in August 2016. An updated edition of XRCVC's publication 'The ABC of Inclusive Publication' was also released on the occasion (ISBN No 978-81-929012-5-1). The foreword for the book was written by Mr Prakash Javadekar, Minister of Human Resources & Development, Govt of India.
  5. Creating accessible content in DAISY and other formats. Furthermore, all the DAISY produced books are uploaded on the DFI Combined Catalogue on the website [www.oblindia.org](http://www.oblindia.org). Hence available across the country for any user.
  6. Publisher partnerships with leading publishing houses such as Oxford University Press, Cambridge University Press, SAGE Publications, Sheth Publishers, S. Chand & Co. Ltd., Zubaan Books, Pratham Books, Himalayan Publishing House, Other India Press, Sahitya Academy etc to provide books in accessible formats.
  7. Worked with the Maharashtra State Board of Secondary and Higher Secondary Education, Pune in changing systems so that accessible copies of school textbooks can be made available with a minimum of time delay.
  8. Worked with BSE Institute Ltd in making books accessible.
  9. XRCVC has also mentored Innovision, a start-up based in IIT Bombay, which is working on an affordable Refreshable Braille Display. Besides, it has been providing regular feedback and testing to Assistech at IIT Delhi, which is working on a similar device.
  10. XRCVC started the system of providing Braille Bills to Reliance Energy and also provided the second phase of feedback on accessibility to their App.



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11. In February 2017, XRCVC, Bookshare, Daisy Consortium, Daisy Forum of India and Sightsavers conducted a workshop on inclusive publishing for local language publishers (Marathi, Gujarati) at St Xavier's College.
  12. XRCVC participated in the National Conference on Review of Bharati Braille and attend two meetings of the Braille Council of India, in February 2017 and March 2017, respectively.
  13. A session on XRCVC's Accessible Book Production Standard 1.0 was conducted at Cygnet Infotech Pvt Ltd in Ahmedabad in March 2016 by XRCVC. These guidelines, with modifications, are to become standard for NGOs involved in book production. This also included a Training on creating Accessible Math Books and an orientation on the use of LaTeX.
  14. The internal Guidelines for XRCVC's Book creation process (XRCVC's Accessible Book Production Standards 1.0) were modified for a larger audience and the same were uploaded on XRCVC's website in March 2017. Alt text was added and an accessible copy of the same was created as well.
  15. XRCVC acquired a new state-of the art Braille Embosser, Index Fanfold V5 in May 2017. The existing Index 4X4 Pro Braille Embosser was relocated to XRCVC-Viviana Extension.
  16. XRCVC hosted the two-day DFI board meeting in February 2020 at St Xavier's College.
  17. In February 2020, Dr Sam Taraporevala was included as a domain expert for development of Indian Standard for Accessibility requirements for ICT (Information & Communication Technology) Products and Services by CDAC.
- **Financial Access:** Access to financial services – banking, ATMs, Stock Market trading, etc. have often been denied to the visually challenged because of inadequate and inappropriate legislation and ground-level mechanisms. XRCVC's work in this area has led to following breakthroughs:
    1. National Securities and Depositories Limited (NSDL) issued a circular in August 2007 for inclusive rules for DMATT accounts
    2. Reserve Bank of India (RBI) issued rules for Banking services to be made accessible in June 2008
    3. Appropriate RBI circular mandating 1/3<sup>rd</sup> of all new ATMs to be accessible issued in April 2009.
    4. Conducted extensive research and testing as also feature enhancement plans to create fully accessible ATMs. These consultations were provided to the banking industry by way of collaborative work with ATM manufacturers mainly NCR and Diebold as also leading banks such as the SBI, ICICI Bank, HDFC Bank, Axis Bank, UBI, Standard Chartered and also the Indian Banks Association in general to develop and deploy effective models of banking and accessible ATMs. The first bilingual talking accessible ATMs have been rolled out from June 2012 starting with Ahmadabad and Mumbai with UBI. These have been followed by the State Bank of India rolling out similar ATMs. Today, over 12,000 such ATMs have been effectively deployed across the country. The coming years will see larger deployments. Work has also commenced with Central Bank and Bank of Baroda to help standardise their accessible ATMs.



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5. Worked closely with the Indian Banks' Association (IBA) and helped create a Standards for Accessible ATM document which has been circulated to all member banks for implementation
  6. Also involved in helping identify suitable locations for positioning these ATMs.
  7. The XRCVC is also being consulted by new manufacturers such as Puerto India to help it build accessibility into its ATM machines.
  8. Provided feedback to Reserve Bank of India on accessible currency notes.
  9. XRCVC interacted with the banking ombudsman and other senior finance officials in 2016-17 to discuss how banking could be made more accessible.
  10. XRCVC had fruitful discussions with the Bombay Stock Exchange Institute on making their courses accessible.
  11. In January 2017, XRCVC members travelled to Bangalore to attend the inauguration of State Bank of India's 'Centre of Excellence for PwDs'. They had a fruitful discussion with the chairman of SBI, Arundhati Bhattacharya. Dr Sam Taraporevala was invited to be on the Advisory Panel of the Centre of Excellence. The Centre of Excellence for PwDs is one of the SBI Foundation's flagship programmes. It was conceptualised with a goal to be a centralised support centre for persons with disabilities. It primarily works on empowering PwDs through skill enhancement to make significant and measurable improvement that enables individuals to enjoy a more productive and satisfying life by optimising their cognitive, physical, social and vocational functioning.
  12. XRCVC helped NCR with checking of Braille labels for their ATMs as requested by the Solutions Manager - Financial of NCR.
  13. XRCVC provided help to ATM manufacturer Perto with regards Braille labels.
  14. Assistance was provided to the Ethiopian National Association for the Blind in their endeavour to develop Accessible ATMs.
  15. In 2017-18, the XRCVC assumed the responsibility to manage and administer the popular Accessible ATM website, [talkingatm.org](http://talkingatm.org), from its founders, Sai Bhagat and Prashant Naik. Through the year, XRCVC members physically checked many ATMs across the country for accessibility.
  16. XRCVC worked during the same year with like-minded organisations to persuade the Reserve Bank of India to make the newly introduced currency notes accessible.
  17. In 2019-20, Dr Sam Taraporevala continued to provide strategic inputs to Mr Sisay Mammo and his team from Incudovate to discuss accessible ATMs for Ethiopia.
  18. In 2019-20, XRCVC continued to work closely with the State Bank of India's Centre of Excellence (CoE), providing inputs for its various projects and programmes.
- **Education Access:** The educational philosophy, the world over, has shifted towards inclusion. However, in reality, several hurdles remain. The efforts in education access aim at addressing various key concerns in this area. And have led to following achievements:
    1. The XRCVC conducts workshops and training programmes in mainstream schools, for the management, teachers and students, to help the school become inclusive. The Centre also conducts Train-The-Trainer workshops with special educators to help build better, skilled professionals.



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2. M.S. Board of Secondary and Higher Secondary Education recognized science education for visually impaired students at the college level. The Board has issued the circular re-iterating the same in Nov 2008
3. The XRCVC collaborated with the University of Mumbai Board of Studies for Psychology so as to help bring out a circular for a student studying T.Y.B.A Psychology and will be appearing for the University examinations. This circular helped the student and examining authorities know of the necessary precautions to be taken care of when the student attempts her practical examinations in the subject.
4. CBSE Board issued circular for admission and examination policies for science education of the visually impaired at the 11<sup>th</sup> and 12<sup>th</sup> standard through circulars in November 2010 and September 2011.
5. The XRCVC was involved in a long arduous struggle to get the Government of Maharashtra recognize the right of person with vision impairment to study the degree course of Physiotherapy. Through its long fought out battle the XRCVC was able to get recognition for the visually impaired students to appear for the Maharashtra CET (Medical) and apply for the Bachelors in Physiotherapy course. Since this achievement in 2010, the XRCVC has worked with visually impaired students and the Maharashtra University of Health Science (Nasik) to create rules of admission and examination for visually impaired students in the B.P.Th course. The XRCVC since 2009 has been supporting students and the University and also prepares accessible content for them.
6. Mathematics and Science learning and teaching has traditionally been considered not possible for visually challenged students because of wrongly held myths and ineffective systems. The XRCVC has begun work in this crucial area to ensure that the visually challenged have equal access to careers and study in this stream through an extensive research study for the same.
7. Lack of universal and appropriate guidelines for examinations across a range of set ups has been a constant hurdle and irritant for the visually impaired through diverse examinations. The XRCVC works in this area by helping students with individual concerns during examinations – as well as is working towards universal national guidelines that can standardize the procedures and create an inclusive exam-taking experience. XRCVC had submitted a proposal for the same to the Ministry of Social Justice and Empowerment in April 2012. This was on the basis of a comprehensive all India research exercise aimed at developing suitable guidelines. Follow up work in this area has resulted in the Department of Disability Affairs (DDA), Ministry of Social Justice and Empowerment issuing a set of Uniform And Comprehensive Guidelines For Conducting Examination For The Persons With Disabilities.
8. XRCVC has initiated work with the Azim Premji University to create a model of inclusive education at the University in all aspects of the teaching learning process. These negotiations are ongoing and likely to create an effective model of work.
9. The XRCVC team has also met the Vice Chancellor of the University of Mumbai to create a model of inclusive education at the University in all aspects of the teaching learning process. These negotiations are ongoing and likely to create an effective model of work.



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10. The XRCVC has played a catalytic role in various capacities in helping to set up and or run resource centers within colleges across the city. For example, the facility at Wilson College, K J Somaiya Comprehensive College of Education, Training & Research and S.I.E.S College of Arts, Science and Commerce and in other parts of the country - Lady Shri Ram College, New Delhi and M J College at Jalgaon.
11. In order to bridge the gap in quality inclusive education at school level XRCVC has begun an active program that aims to build an effective and replicable model of school level inclusive education program. Currently this involves XRCVC working with Prime Academy, Mumbai to provide all round inclusion support to the school management, teachers, and two students with blindness at the school. This includes providing extensive teacher training and in-service support in addition with providing student support in special skills. As part of this system XRCVC also provides in-time availability of accessible textbooks and content which not only include braille text but also accessible tactile diagrams of visuals and alternate text descriptions.
12. XRCVC worked closely with officials from Rashtriya Uchchar Shiksha Abhiyan (RUSA) to take forward the mandate of RUSA in ensuring quality in higher education and achieving excellence. Equity through inclusion in higher education is one of the key components under RUSA. XRCVC also helped RUSA prepare a draft government resolution to build equity for persons with disability. In September 2016, XRCVC conducted a session on building inclusive education through support services at the higher education level as part of a 'Consultation Meet on Academic Autonomy for Eligible Colleges', organised by RUSA in collaboration with St Xavier's College. XRCVC also provided a demonstration of access technology to the delegates made up of principals and senior officials of various colleges / universities in Maharashtra. Representatives from Shri Shivaji College of Arts, Commerce and Science, Akola, Shivaji University Kolhapur and North Maharashtra University, Jalgaon visited XRCVC to familiarise themselves with the activities of the centre as they plan to set up similar resource centres in their facilities.
13. Work was also initiated in June with the office of the Surveyor General of India in order to make accessible maps available to students and persons with blindness and low vision.
14. The XRCVC has initiated pioneering work in the area of mathematics and science education. Students are provided direct support services. The XRCVC created accessible electronic textbooks, Teaching-Learning Aids (TLAs), and provided conceptual training to these students. In addition, the XRCVC has started creating a TLA resource library for mathematics and science education, starting Std 1 onwards.
15. The XRCVC's team on inclusive education is working on Concept Teaching Manuals (CTMs), which have been designed for use by teachers working with blind or low vision students. Special educators or parents working on a one-on-one basis, as well as classroom teachers and tuition teachers in an inclusive classroom can incorporate the information and ideas from these manuals. These CTMs cover interactive ways to teach concepts to blind or low vision students including the use of Teaching-Learning Aids (TLAs) in the form of activities, real objects, 3D educational toys and models, 2D tactile diagrams, etc.



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16. XRCVC participated in a consultation organised by Sightsavers in Delhi in on the topic 'School Readiness Framework for CVI in IE'. It was an orientation programme on inclusive teaching practices for teaching CVIs in inclusive education.
17. XRCVC has conducted its capacity-building workshop— 'I For Inclusion' for various stakeholders including the teachers of the Prime Academy (ICSE) school, Marol, the St. Xavier's Institute of Education, and the North Maharashtra University, Jalgaon.
18. XRCVC is providing mentorship and assistance to Kabir Nagral, a Grade 10 student at Phillips Academy in Andover, Massachusetts (USA) who has been awarded a fellowship by his school to research learning initiatives for visually impaired students in India and the US. The eventual goal of his research is to identify, adapt and deliver effective and affordable maths and computer learning solutions which will provide job skills for the visually impaired.
19. The UGC team to review autonomy for the college visited XRCVC in 2017 as part of its evaluation. The centre's work came in for high commendation in their report.
20. A team from Mumbai University's Local Inspection Committee visited XRCVC in to learn about the work done at the centre. They were in St Xavier's College to review the affiliation for unaided courses.
21. XRCVC set up a support group of Higher Education STEM visually impaired and low vision students to start a collaborative process of work.
22. XRCVC worked closely with Victoria Memorial School to provide support to their students .
23. XRCVC also worked with educationists and fabricators to help develop and test a Geometry kit for visually impaired students.
24. From 2017-18, XRCVC collaborated with likeminded stakeholders to start an initiative called Inclusive Stem (I-Stem) comprising a group of young persons who are blind or visually impaired from India pursuing science, technology, engineering and mathematics (STEM) education and careers. The group aims to be the leading self- advocacy group focused on changing the mind-set, the resource availability and opportunities for the blind and visually impaired to pursue STEM education and careers in India. Building on the previous work of XRCVC members and partner organisations in this area, the group works on different aspects of STEM access, including technical research to enhance maths and science access, outreach to encourage blind students to consider STEM careers, advocacy for more inclusive policies, initiatives to sensitise universities and companies, and development of accessible STEM content. On January 20 and 21, 2018, I-Stem organised its first event, a unique hackathon at IIIT Bangalore, in collaboration with EHRC, IIIT Bangalore, Vision Aid, and Vision Empower. The aim was to bust myths about blind programmers and start the process of making the tech industry in India accessible. The hackathon brought blind and visually impaired developers, industry professionals and sighted computer science students together to work on exciting and challenging projects for 24 hours. Not only did participants learn technical skills from the hackathon, but also developed a better understanding of each other's strengths and weaknesses. I-Stem has been organizing regular annual hackathons since then.
25. During the year, the XRCVC was also invited by IIT Kanpur to help their PWD Cell build better accessibility on campus for students with disabilities. A team from XRCVC visited IIT Kanpur in April and May and met with the Dean of Academics, members of the faculty, the Persons with Disabilities Cell, the Chief Medical Officer and students with disabilities on campus. The



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- team also visited labs on the campus and provided inputs on how they could be made accessible. IIT Kanpur is keen to implement the Inclusion Model that has been set up locally by XRCVC at St Xavier's.
26. In June 2017, XRCVC was invited by the National Council of Educational Research (NCERT) as part of its process to make science education more accessible to the blind and low vision.
  27. In July 2019, Dr Sam Taraporevala was a speaker and panelist at the 6th Annual Drishti Symposium being organised on the theme, 'Leading Mixed Ability Classrooms' at ADAPT, Mumbai.
  28. In September, Dr Taraporevala was a speaker and panelist at the National Conference on Social Integration, 'Know your Rights' organized in Keshav Vidyapeeth, Jaipur.
  29. The centre also collaborated with NCERT in its efforts to make science kits for the blind at the upper primary school level.
  30. In May 2019, XRCVC was invited by Vision Empower to train its staff and volunteers to create accessible Science and Maths content for the visually impaired. Vision Empower is incubated in IIIT Bangalore.
  31. During the year, a team from XRCVC also visited IIT Madras to provide inputs on the assistive technology laboratory they are working on.
  32. The centre also held a meeting with Desai Foundation for Change to discuss the working of the resource centre at Swami Vivekanand College.
  33. During the year, XRCVC worked with Drishti on potential collaborations in the area of inclusion in classrooms.
  34. XRCVC continued to give critical inputs to the Bangalore-based company Tactopus, which creates tactile graphics, and also has an interactive audio companion through a smartphone app, that makes it possible for blind children to learn independently.
  35. XRCVC worked closely with IIT Kanpur to make their laboratories more accessible, and helped Ashoka University (Sonipat) and St. Andrews College (Mumbai) to build their resource services.
  36. The centre shared tactile diagram guidelines with the National Atlas and Thematic Mapping Organization (NATMO) and also held a meeting with NATMO's director.
  37. The centre also worked with ATMA, Next Genius LD Workshop Consultants, Curry College, and Foreman School on inclusion-related activities.
  38. The centre initiated a conversation with Thinker Bell Labs for a possible partnership. Thinkerbell Labs works in the area of inclusive education and is driven by intuitive engineering and design.
  39. *Degrees of Accessibility*, the XRCVC's pioneering 360° User Perspective Report on Existing Accessible Geometry Construction Kits for students with blindness, was released in January 2020 by Mr. K M Sheth, the patriarch of Great Eastern Shipping, which had funded the research project.
  40. XRCVC provided strategic support to the Andrew's Vision Centre, a resource centre for visually impaired students at Wilson College, during the year 2019-20.
  41. Inputs were given to Point of View on a Sex Education course for students with blindness.
  42. In September 2019, Dr. Sam Taraporevala was invited as a panelist for the Inclusion Huddle 2019 on the subject, 'Path for Inclusive education' jointly hosted by Youth4Jobs, CII and



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Mumbai University.

43. In February 2020, the XRCVC made a presentation on Facilitating the Inclusion of Students with SLD in Higher Education at the Maharashtra Dyslexic Association's National Conclave.
  44. The centre also coordinated with officials from Skill Shakti for possible collaborations for students with SLD and ASD.
  45. The XRCVC team had conversations with Curry College in 2019-20 to understand their framework for inclusion.
  46. The XRCVC coordinated with NAB and other organisations during the year 2019-20 to make SSC books accessible.
  47. In March 2020, the XRCVC conducted a session on Inclusion in Higher Education at a seminar organized by DISHA.
  48. The XRCVC played a catalytic role in the formation and launch of Inclusive University Alliance (IUA). This is a collective of institutes of higher education in India that have come together to promote inclusion within higher education. Beyond St. Xavier's College, Mumbai the collaborating institutes so far include the following: Ashoka University, Sonapat, IIT-Kanpur, IIT-Delhi, IIT-Madras, IIM-Bangalore, IIIT-Bangalore, Inclusive Science, Technology, Engineering, and Mathematics Foundation (I-Stem), Vision Empower, Bengaluru. The Alliance so far has been working and sharing and building best practices between themselves.
- **Independent Living:** The XRCVC has initiated work towards accessibility of consumer goods, electronic products and transport services for persons with visual impairment. The XRCVC aims to work with leading consumer product manufacturers and transport service providers to ensure their services and products meet accessibility standards. The key achievements in this area have been the following:
    1. By working with the key Physiotherapy equipment manufacturers the XRCVC through its R & D initiatives have been able to launch the first of its kind accessible Physiotherapy machines. These included the:
      - a. Talking Interferential Therapy Unit (IFT) machine of Unique Medical Appliances
      - b. Sound guided Short Wave Diathermy (SWD) machine of Tapsi and
      - c. Talking Ultrasound and Interferential Therapy Unit (IFT) machines for Johari Digital Healthcare Ltd.The same are available in the market at no additional cost.
    2. XRCVC has initiated work with the Railways and the BEST system in Mumbai to look into key issues of accessibility. These are ongoing initiatives currently. Based on XRCVC recommendations initial work such as tactile tiles on some suburban railways stations have been initiated.
    3. XRCVC is being consulted by a leading upcoming Mall – Viviana at Thane to ensure an accessible shopping experience within the mall area. These consultations are ongoing and would ensure that the shopping experience at the mall for persons with disabilities would be accessible.
    4. The XRCVC also conducted a one day Cooking Workshop titled Survival 101 for the members of the XRCVC where they were introduced to basics in cooking. This was part of a



- pilot part of the project for further scaling up.
5. Worked closely with the Government of India on its Accessible India Campaign (Sugamya Bharat Abhiyan).
  6. Worked with Mumbai Transformation Support Unit (MTSU) to give inputs in the Draft Development Control Rules (DCR) and Development Plan (DP) for Bombay prepared by MCGM.
  7. Worked closely with UMOJA, a hospitality company and travel portal, on making the hotel experience accessible for visually impaired persons. The XRCVC also facilitated a focus group discussion on accessibility in hotels for UMOJA.
  8. Worked with Zomato, the Association of Hotels and Restaurants (AHAR), and Samsung India on making the offerings of these organisations accessible.
  9. Worked on pilot testing of location identification signages called Beacons nbwtech.com. The plan is to have a Mobile Application in place for indoor navigation and identification for blind users. Also coordinating with a firm called NWBT on installing Beacons at Mumbai airport. Also worked with a few engineering students on the Beacon project.
  10. Worked with Jet Airways to help make their website accessible.
  11. Collaborated with an international project, Goodfood Talks ([www.goodfoodtalks.com](http://www.goodfoodtalks.com)), which is an accessible menu library for blind and low-vision persons.
  12. Worked on the prototype design of a unique Braille identity card at the request of the Ministry of Social Justice and Empowerment, Delhi.
  13. Submitted suggestions to the Ministry of Urban Development (MoUD) on Harmonized Guidelines and Space Standards for Barrier Free built environment for persons with disability and elderly persons. For this purpose, the XRCVC coordinated with Mr Mukesh Jain from the ministry of Social Justice and Empowerment and Anjalee Agarwal of Samarthyam in order to integrate the VI Perspective
  14. Helped guide two filmmakers—one in Hindi and the other in Marathi—to incorporate visually impaired characters in their films, and provided training to the actors as well.
  15. Collaborated with Point of View to offer a Digital Storytelling Workshop for XRCVC's members. Digital Story Telling is a creative form of expression, which enables the participants to delve within and talk about one story/ experience / moment that stands out most for them.
  16. Suggestions submitted to the Ministry of Urban Development, Delhi by XRCVC were incorporated in the 'Harmonised Guidelines And Space Standards For Barrier Free Built Environment For Persons With Disability and Elderly Persons – February 2016'
  17. XRCVC offered suggestions and help to Shishu Sarothi, a Centre for Rehabilitation & Training for Multiple Disability, based in Guwahati (Assam), for their Braille signages project.
  18. Worked with LEAF Design Pvt Ltd on accessibility initiatives with design students.
  19. Continued ongoing research and development work on visual / auditory / tactile teaching-learning aids and other independent living aids. Worked on integrating diverse technologies which could create a composite system to read through fingers, see through eyes, or hear through ears. The research also has immense potential for the teaching-learning process as it can promote paired reading and can assist a non- Braille literate person to also function effectively.



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20. In December 2017, the XRCVC team met with a team from Amazon in Bangalore to discuss accessibility and other feature enhancements of the company's Echo devices. It has also actively launched an analysis of smart home devices as accessibility solutions for the blind and low vision.
21. In 2017-18, The centre also prepared a detailed response to a consultation paper on Making ICT Accessible for PWDs and submitted the same to TRAI.
22. In 2019 XRCVC collaborated with accessibility expert Parul Kumtha to conduct an Accessibility Audit of St Xavier's College (Autonomous).
23. Collaborated with XL Cinema Apps and Viviana Cinapolis, Thane to organize an audio-described screening of the film 'Sanju' in July 2018.
24. Collaborated with Hinduja Hospital to organize two workshops for visually impaired persons on 'How to administer Cardio Pulmonary Resuscitation (CPR)' during medical emergencies.
25. Worked with CSMVS Museum, Mumbai on accessibility initiatives.
26. Worked with Adventures Beyond Barriers (Pune) and DOW Chemicals Mumbai on the on-boarding of a few visually impaired employees in DOW.
27. Followed up with officials from the BEST on Onboard, a bus identification system for the visually impaired.
28. Provided inputs to Tech Mahindra on creating a Job Training Strategy for Visually impaired persons.
29. Provided inputs to Orcam – an Israeli company working on assistive technology for visually impaired persons which has developed a device named MyEye.
30. Provided inputs to the Navi Mumbai Municipal Corporation on how to set up a resource centre.
31. Collaborated with Social Alpha, an organisation that is building a programme and a platform for assistive technology-based solutions that empower people with disabilities.
32. Provided inputs to students from Xavier's Institute of Engineering for their Accessibility Projects.
33. Collaborated with Saksham, Enable India and Bookshare for the See A Million programme, a unique time-bound outcome-based mission focusing on digital empowerment of one million persons with vision impairment by 2025.
34. During the year 2019-20, XRCVC signed an MoU with the Chhatrapati Shivaji Maharaj Vastu Sangrahalaya on how to make the museum experience accessible for visually impaired visitors.
35. In 2019-20, the XRCVC team participated in an event organized at Café Arpan with Accenture on building accessibility.
36. In November 2019, XRCVC participated in the LEARN workshop in collaboration with HomeNet South Asia. The objective was to localise a 'policy brief on urban livelihoods' in Maharashtra, developed by the national platform INCLUDE ([www.include.org.in](http://www.include.org.in))
37. In January 2020, XRCVC participated in a Consultation on VNR 2020 (Voluntary National Review) for the UN High-Level Political Forum organised by NCPEDP and Sightsavers India in Delhi.
38. During the year 2019-20, the XRCVC team provided inputs to a student from Dhirubhai Ambani International School who is developing an accessible board game.



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39. The centre also provided inputs in 2019-20 to Cathay Pacific on braille printing.

40. In January 2020, XRCVC showcased a short film on its work at the Great Eastern CSR partners meet.

### II. AWARENESS INITIATIVES – WORKSHOPS AS PART OF EXTENSION WORK

XRCVC has been actively and widely involved in awareness initiatives to break wrongly held myths about lives of persons with disabilities.

- The XRCVC awareness initiative, **Antarchakshu® – The Eye Within** through its various formats – mega events, workshops, talk shows, etc., gives an opportunity to persons without disabilities to understand the perspective from the other side by giving a firsthand experience of disability conditions, helping participants recognize what is ‘disability’ and what is not. These workshops and events are organized with a wide range of participants including teachers, students, employers, government personnel, designers, IT professionals, corporates, and citizens at large. In 2017-18, the centre relaunched Antarchakshu as Antarchakshu 2.0, a bespoke awareness event designed to the needs of specific audiences. In July 2020, Antarchakshu® was conducted outside India for the first time, when a special awareness workshop was conducted for Special Education Teacher Trainees at PH University Ludwigsburg (Germany).

**The XRCVC has conducted 413 such events through the years and reached out to 37,919 persons.** The year wise breakup of the figures is provided below.



**The theme for Antarchakshu® 2014 was inclusive education; visitors conduct experiments inside an inclusive science laboratory**



**Table 06: Number of people reached out through sensitisation and access technology awareness programs from academic year 2006 – 07 onwards**

2006-07	387
2007-08	1324
2008-09	1279
2009-10	1808
2010-11	2269
2011-12	2757
2012-13	3835
2013-14	3209 (as of 30 April 2014)
2014-15	4913
2015-16	4348
2016-17	2566
2017-18	2195
2018-19	3552
2019-20	3477

In addition to the three main verticals of work listed above, some additional key highlights of XRCVC work over the years have been the following:

In May 2016, the XRCVC launched a comic strip series titled 'You & Eye' as a sensitisation and awareness initiative. Probably India's first comic strip on the lives of visually impaired persons, 'You & Eye' is a collaborative effort between the XRCVC, Jagran Group publication Mid-day, and Pune-based cartoonist, Nala Ponnappa. Starting May 1, the comic strip continues to be published every week in the Sunday edition of Mid-day for 52 weeks.

### Additional Key Highlights

- 1. Consultation with the Ministry of Social Justice and Empowerment:** The XRCVC in 2007-08 was a member of the core team involved in the scheme of the Ministry of Social Justice and Empowerment working towards setting up of resource centre for visually challenged persons across higher education institutes in India.
- 2.** As part of this team, the XRCVC was involved in preparing a draft of the scheme for resource centre requirements in Higher education. Further, the XRCVC also provided its consultation towards a coaching course in enhancing the skill sets of persons with disabilities for Group A and B government jobs.
- 3. Career Guidance – Career Seminar:** In order to orient visually challenged students to the vast array of career options and get them motivated to select the right career options, the XRCVC organized a two-day National Career seminar 'Employment- Expanding Reach'. The seminar held on 13<sup>th</sup> – 14<sup>th</sup> Sep 2007, saw over 60 participants. The participants were both visually challenged students from different colleges in Mumbai and Pune as also parents and other professionals working with the visually challenged. As a follow up to the career



seminar the XRCVC has published an information CD and data pack including proceedings which can be used as a very effective career guidance and career choice pack for the visually challenged. We have distributed over 100 CDs across different parts of the country.

4. **The Blind Act-Audio Visual:** In 2007 this audio visual by the XRCVC which targets opinion makers has been designed to create awareness on the problem of the copyright law as it impacts the visually challenged.
5. **Air Travel Accessibility:** The XRCVC in 2008-09 in partnership with Kingfisher created an accessible air safety manual for visually impaired guests on board. The XRCVC has created a complete Braille, large-font and tactile version of the in-flight safety manual for Kingfisher Airline for all their current aircrafts.
6. **XRCVC Publication:** In 2008-09 the XRCVC released a publication of its own available in all three accessible formats of DAISY, Braille and Large Font. The publication is a book on Homonyms, an area that is of special relevance to the visually impaired given their increased reliance on sound to read. The publication is titled **“Write-Right: Understanding Homonyms Better”**. The XRCVC has distributed over 500 copies of the book in various formats cross the country being actively used by various individuals and organizations working with persons with vision impairment.
7. **Awareness Audio Visual:** Towards awareness efforts, the XRCVC has released an Audio-Visual: **Accessibility 2.0** highlighting the range of AT available today. The AV serves the purpose of introducing assistive technologies to any novice in the area, and orienting users to the wide range of products available today.
8. **Print Access Workshop:** In November 2008 conducted a specialized Print Access workshop aiming at orienting and training participants especially in technologies that will enable them to access the printed word. 31 participants participated in this special event to help parents, students and professionals learn in detail the various ways to access the printed word.
9. **Accessibility of St. Xavier’s College, Mumbai Campus:** The XRCVC has been actively involved in ensuring that the College campus has been made accessible for persons with disability. The XRCVC in partnership with Ms Parul Kumtha (Architect) and the Sir J.J. College of Architecture, Mumbai initiated an Accessible Audit of the Campus in 2007 and since then have been part of implementing the report results to ensure that today the campus is accessible to students and persons with disabilities.
10. **Parent Support Group:** In January 2009 the XRCVC started a Support group for Parents and Care Givers of visually impaired persons. The group **‘XRCVC-Connect’** meets on a need basis and has been initiated to provide much needed support and guidance to care givers at the crucial stage of development for children, and to also become a source of sharing of resources and experiences.
11. **Right to Read Campaign:** The XRCVC in January 2010 conducted a Right to Read campaign for the western region of India to seek support of publishers and writes for the print impaired person’s right to read. The campaign was extremely well received and got endorsements from over 600 authors and publishers including well renowned names such as Mr. Tarun Tejpal, Mr. Arun Shourie, Mr. Harsha Bhogle, and Mr. Jean Dreze amongst many others.



12. **Banking Access Handbook:** The XRCVC in partnership with CII- Ability Forum in 2010-11 was involved in creating a handbook - Banking Access for the Visually Challenged: An FAQ, which has been used extensively to generate awareness on the issue.
13. The XRCVC has also published for accessible banking aimed at smoothening the banking experience for visually challenged customers.
14. **UID Cards for persons with Vision Impairment:** XRCVC in 2011-12 Worked with Mahaonline – a joint venture between the Maharashtra government and the Tata Consultancy Services to set up a camp to register people with visual impairment for the Unique Identification number and card. A total of 281 persons were registered during the three day camp held.
15. The XRCVC hosted the General Body National Conference & Board meeting of the DAISY Forum of India (DFI) at Lonavala from the 15<sup>th</sup> to the 17<sup>th</sup> of May 2012. It was attended by 46 participants representing 25 organizations from across the country.
16. The XRCVC along with Inclusive Planet created and widely circulated an FAQ on the significance of the amendment to the Copyright Act of India 1957 on persons with disabilities.
17. Collaborated with the Union Bank of India in creating accessible copies of 'Handbook on Truly Accessible SampUrna ATM' in Braille, DAISY and standard print.
18. Antarchakshu 2012 at JNU, New Delhi was held on the 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> of October 2012 by the XRCVC in collaboration with the National Institute for the Visually Handicapped (NIVH), Dehradun, the Equal Opportunity Office (EOO) of the Jawaharlal Nehru University (JNU), New Delhi, Saksham Trust, New Delhi and Sightsavers conduct Antarchakshu as a standalone event on the proposed dates of October 2012 at the Jawaharlal Nehru University Convention Centre, New Delhi. This was the first time that the mega version of Antarchakshu was conducted outside Mumbai. 1540 participants experienced this program and were sensitized through the 1 hour process of a simulation along with an exhibition that the XRCVC had to offer. The theme for this year was Achieving Access, Breaking Barriers where emphasis was laid on Inclusive Education, Banking Services and Equal Employment Opportunities. Shri Mukul Wasnik, Hon'ble Minister for Social Justice & Empowerment, Government of India inaugurated the event on the 4<sup>th</sup> of October and went on to be the event's first participant. His participation was then followed by a press conference where he answered questions put forth on accessibility, inclusion and the measures the government is carrying out to achieve the same. Prof S.K. Sopory, Vice Chancellor, Jawaharlal Nehru University, New Delhi was the final participant of the event on the 6<sup>th</sup> of October 2012. His participation was followed by a valedictory function where he congratulated all the partner organizations and volunteers who helped to make the event a huge success. The event was appreciated at various levels and received good media reports and footage that helped to spread the work about inclusion and accessibility.
19. Following the success of Antarchakshu at JNU, the event has been successfully held at many other venues including IIT Bombay, the World Book Fair (Delhi), Epicentre (Gurgaon) Viviana Mall in Bombay, and, of course at St Xavier's College. More details about these events follow.



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20. The XRCVC was also invited by the NASSCOM to conduct two modified modules of the awareness and sensitization workshop for corporate representatives from various national and multinational organizations as part of the NASSCOM summit on Diversity and Inclusion in the Workplace.
21. The XRCVC has been selected as a suitable location for the Online Braille Library project to host Refreshable Braille displays for users to access the National level Online Braille Library (OBL).
22. The XRCVC was also requested by the TAJ Group of Hotels to help make their facilities in Mumbai accessible by placing Braille labels for their rooms and services provided so that they could take one more step ahead in creating an accessible layout for people with visual impairment.
23. The XRCVC collaborated during the year 2013-14 with a team from Viviana Mall in Thane to make the mall accessible for people with disabilities. We also designed and helped print a tactile floor map of the mall, which can be of immense use to visually impaired visitors.
24. XRCVC launched a project to make Maths and Science learning accessible for the visually impaired. XRCVC's report on the subject titled '*Numbers and Reactions*' was released at Techshare in Delhi in February 2014 by Ms Loveleen Kacker, CEO, Tech Mahindra Foundation. Earlier, in July 2013, the XRCVC conducted a Maths and Science workshop for parents, teachers and special educators. In 2013-14 the centre also acquired accessible software like VP Algebra, Audiographic Calculator, Nemetex, Maths Types, Maths Daisy and Sci-Voice for the newly acquired LabQuest hardware to impart training in Maths and Science to visually impaired students.
25. XRCVC published and distributed a handbook titled '*The ABC of Inclusive Publishing*' during in February 2014. The handbook aims to initiate the process of building a constructive partnership between the publishing community in India and the world of the print-disabled within the framework of the Copyright Amendment Act, 2012, in India. A large number of copies of the handbook were distributed to visitors at the World Book Fair in Delhi in February 2014, where XRCVC had organised a sensitisation programme titled 'Reading Without Seeing'.
26. On the occasion of Antarchakshu at St Xavier's College in September 2013, XRCVC published and distributed a handbook titled '*Bankers' Guide to Inclusive Banking*'. The handbook aims to sensitise the banking community to the needs of visually impaired customers.
27. XRCVC created a short audiovisual in August 2013 titled '*Breaking Barriers, Achieving Access*'. The audiovisual is designed to reinforce the message that the visually challenged lead independent, successful and fulfilling lives, and was shown to all participants of Antarchakshu.
28. The XRCVC published a book 'I For Inclusion', which was distributed to all participants at Antarchakshu® at St Xavier's College in September 2014. It is a handbook on mainstreaming education for students with blindness and low vision to help the educator better understand the various nuances of building an inclusive set-up within the educational framework.



- 29.** The XRCVC published a book 'Equip Your World – A synoptic view of access technologies for the visually challenged', a manual on access technologies for the visually challenged, was compiled and edited by Dr Sam Taraporevala and Calveena D'Sylva. It was released in November 2014 by the Minister of Social Justice and Empowerment, Govt. of India in Dehradun. It has been published jointly by the XRCVC and the NIVH (National Institute for the Visually Handicapped) and is available in three different formats (sighted large font print, Braille, and full-text-full-audio DAISY). This book is a widely researched compilation of over 300 diverse technologies which can help in the holistic development of blind and low-vision persons, and can ensure their effective participation as productive members of society. The book is a culmination of Reading Without Seeing, an outreach programme conducted by the XRCVC, at which users get an opportunity to have a hands-on experience of a wide range of assistive technologies.
- 30.** The XRCVC also conceptualised and designed a 2015 calendar-cum-'Braille alphabet' tutor in the size of a bookmark which was printed at Chanakya Mudrak, Delhi. It has been printed using a special polymer deposit technology, which seamlessly blends Braille with sighted text in such a manner that it can be used by visually challenged persons as also the sighted. Similar approaches have been possible using screen printing methods. However, those need large volumes to make them financially viable. This unique approach of digital print enhancement is useful when volumes are relatively low. It can also very successfully incorporate 2D graphics. Useful applications of this technology can be when illustrated storybooks in Braille can be created for children where paired reading using sighted text and Braille can be created on the same surface. The thicker paper ensures that the dots would not degrade as they are not the result of perforations but rather a polymer deposit.
- 31.** The XRCVC provided consultation, training and support to the crew of a film 'Do Lafzon Ki Kahani' which features the lead actor (Kajal Agarwal) playing the role of a blind girl.
- 32.** Dr. Taraporevala was invited by the Department of Disability Affairs, Ministry of Social Justice and Empowerment, Government of India to be a member of the expert committee for its ADIP scheme. The Ministry has been implementing the Scheme of Assistance to Disabled Persons for Purchase / fitting of Aids and Appliances (ADIP) since 1981 with the objective of providing durable / sophisticated and scientifically manufactured modern, standard aids and appliances to promote physical / social and psychological rehabilitation of Persons with Disabilities (PwDs) by reducing the effects of disabilities and to enhance their economic potential. The XRCVC subsequently prepared and submitted to the DDA a list of Access Technologies that can be used under the government's ADIP scheme.
- 33.** In August 2014, the XRCVC aided the distribution and helped spread awareness of two innovative and affordable assistive aids for visually impaired persons (SmartCane™ and PlexTalk Vachak) under the Government of India's Assistance to Disabled Persons (ADIP) scheme. At a mega function, over 100 of these devices were distributed by film actor Vidya Balan, an alumna of St Xavier's College, who said, "Any opportunity to go to St Xavier's is welcome and then to be going back for a special event organised by the XRCVC to distribute affordable assistive devices to the visually challenged is humbling. Prof. Sam has been a huge influence and inspiration in my life and the XRCVC is a testimony of his conviction and relentless efforts. I look forward to going down memory lane as much as I



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do to being part of this afternoon that will leave an indelible mark on the lives of those who receive these devices.” Under the ADIP Scheme, which was established by the Department of Disability Affairs under the Union Ministry of Social Justice and Empowerment in 1981, low-income people with disabilities can avail of aids, devices and some basic surgical procedures either free of cost or at subsidised rates. The distribution was conducted in association with Saksham Trust, Delhi and IIT Delhi in conjunction with the National Institute for the Visually Handicapped (NIVH), Dehradun.

34. In 2015, four films by the XRCVC were shortlisted for the finals of 'CommunicAbility', a Documentary Film Competition held by The Catholic Health Association of India in Hyderabad. The films were Accessibility 2.0. The Blind Act, Breaking Barriers, Achieving Access, and I Experience, I Learn (Antyodaya).
35. XRCVC member and ex-staffer Prashant Naik, currently an employee of Union Bank, received the NCPEDP Mphasis award for Universal Design during the year in the area of disability.
36. The XRCVC worked closely with the BEST, IIT Delhi and Mumbai First to test OnBoard, globally a first-of-its-kind device developed by ASSISTECH Group, IIT Delhi that facilitates boarding of public buses by visually impaired persons. The device helps users to not only identify the route number but also to locate the door of the bus, thus addressing their needs comprehensively. The device works on radio frequency and consists of a very affordable, small user module and a bus module with a speaker fitted next to the front door of the bus. The system has a very simple user interface.
37. In June 2017, Dr. Sam Taraporevala gave a talk on a social justice perspective at Cochin University (Kerala) at a refresher course conducted by the university (CUSAT). He also met officials from SRF Foundation and provided inputs on their Inclusion Projects.
38. In December, Dr Taraporevala gave a talk on how to effectively manage and generate positive outcomes from resource centres (The XRCVC Experience) at a Power Breakfast with Leaders and Visionaries alongwith participants at the Consultative Networking Workshop for Digital Empowerment leading to Livelihood Generation of Persons with Vision Impairment organised by Enable India in Bangalore. There were 75 participants. In the same month, he was invited by Wipro as one of the panel members for a discussion about the positive impact of technology accessibility for persons with disability, as part of International Disability Day celebrations.
39. Dr Taraporevala also delivered a talk on 'Dependence to Independence – Making Maharashtra Disabled Friendly' on the theme of employability at the Indian Merchants Chamber's Chamber of Commerce and Industry in Mumbai.
40. In July 2019, the XRCVC team participated in a conference held at Hindustan Unilever on workplace solutions. An Access Technology exhibition was also put up at the conference.
41. In August 2019, Dr Sam Taraporevala was invited by Reliance Industries as a speaker on a panel discussion titled 'Let's Talk D&I'.
42. In August 2019, XRCVC was invited by IIT Gandhinagar (IITGn) to conduct a series of sensitisation workshops as part of the 'Foundation Program' for freshman students. Over 200 students benefitted from the same. This was the second year that the XRCVC had been invited to conduct these workshops.



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43. In September 2019 he was invited as a TedX speaker by St. John's Universal School to expose students to the idea that disability can never be a barrier if you have the wish to excel.
44. A Braille Workshop was conducted in September 2019 for members of the Student Inclusion Cell of St Xavier's College.
45. In October 2019, the XRCVC conducted an awareness exhibition of Access Technology for the Inner Wheel Club of Thane.
46. In October 2019 the XRCVC in partnership with a group of organisation curated and conducted an experience zone at Empower 2019 Conference at IIT Delhi located in the Rajiv Gandhi Education City in Sonipat. The experience zone exhibited the collaborative work by partner organisation to create accessible STEM education and careers.
47. In November 2019 a team from the XRCVC participated in 'Popularisation of Science' exhibition in St. Xavier's College.
48. In November 2019, at St. Xavier's College, Mumbai the XRCVC organised Training of Trainers on Disability and Assistive Technology in collaboration with Skill council for persons with disability (SCPWD), National Skill development corporation (NSDC), Department of international development (UK, Government), Skill India, FICCI
49. In November 2019, at St. Xavier's College, Mumbai, the XRCVC organised a Mindful Employers workshop in collaboration with Skill council for persons with disability (SCPWD), National Skill development corporation (NSDC), Department of international development (UK, Government), Skill India, FICCI. Dr. Sam Taraporevala gave a guest lecture in this workshop.
50. In December 2019 Dr Sam Taraporevala was invited as guest speaker for the Residential Leadership Training Camp at Lonavala by Forum of Free Enterprise.
51. In December 2019, Hindustan Unilever Limited invited XRCVC to exhibit assistive technologies for the blind during their Diversity and Inclusion Fair event.
52. In January 2020, the XRCVC conducted an Access Technology Awareness Exhibition at Dnyansadhana College, Thane.
53. In February 2020, Dr Sam Taraporevala was invited by SNTD College Juhu for a national conference and addressed over 150 participants on the theme, 'Environmental Barriers and Universal Design'.
54. In February 2020, Dr. Sam Taraporevala was invited by V-Connect Foundation (a parent support group for children with hearing loss) to be on the panel at the Launch of their Mainstream Guide at Y B Chavan Auditorium.
55. During the year XRCVC continued to deliver a unique course called 'Diversity Discourse' which had been developed for the Xavier's Institute of Communication (XIC) in 2018-19. The objective was to sensitise participants to the many communities that society implicitly and explicitly ignores, and make a case for why it is necessary to bring these communities into mainstream public discourse. The content was imparted mainly through interactive workshops to over 250 students at XIC. This course was also offered to Honours students of St Xavier's College.



### Publications / Conferences / Paper and Seminar Presentations

#### 2005-2006

1. Dr. Sam Taraporevala presented a paper 'A Step Towards Inclusive Education' at a National Seminar 'DISHA' on Higher Education at St. Xavier's College, Mumbai. The paper was subsequently published.
2. Dr. Sam Taraporevala presented a paper 'Providing quality education for special needs through technological interventions – A case study at St. Xavier's college Mumbai' at the National level Seminar on Fostering Quality in Higher Education' in HR College, Mumbai.

#### 2006-2007

1. Dr. Sam Taraporevala gave an invited talk on issues of copyright amendment and Print Impaired along with the XRCVC presentation to members of Intellectual Property Law Practitioners Association (IPLPA) in Mumbai.

#### 2007-2008

1. Dr. Sam Taraporevala, Techshare Conference, Delhi - 'The Copyright Challenge – The Indian Case'
2. Mr. Prashant Naik, Techshare Conference, Delhi –' Banking Access for the visually challenged – The Biometric Option'
3. Dr. Sam Taraporevala, Ms Neha Trivedi – International Colloquium on Inclusion, Mumbai, - 'Sensitization towards Persons with disabilities within college education'
4. Ms. Neha Trivedi , Print Access for All , IIT, Chennai - "Copyright & Print Access - Response & Challenge: A Higher Education Case Study"
5. Dr. Sam Taraporevala, Panelist and Paper Presentation at the UGC State Level seminar focusing on inclusive education, St. Xavier's Institute of Education, Mumbai.
6. Dr. Sam Taraporevala participated and presented at the Seminar on "Inclusion exclusion – exploring Issues and Practices" on the theme of "Sensitization to facilitate the differently abled students Inclusion in Higher education. Jointly organized by Liverpool Hope University, St. Xavier's College Mumbai and XRCVC.

#### 2008-2009

1. Dr. Taraporevala presented paper on 'Social Advocacy' at the NAB State Branches meet in February 2009.
2. Dr. Sam Taraporevala presented a paper at National Conference 'Disability and Disenchantment: New Challenges and Evolving Directions' at Jawaharlal Nehru University (JNU), New Delhi on 'Copyright & Print Access - Response & Challenge: A Higher Education Case Study' in March 2009.



### 2009-2010

1. Dr. Sam Taraporevala made a presentation at the Sightsavers International regional meet on "New initiatives in Inclusion" under the theme "social inclusion"
2. Dr. Sam Taraporevala presented a paper on "Setting up resource centers and Capacity Building" at the National Conference on ICTs for the differently-abled under privileged communities in Education, Employment and Entrepreneurship 2009 - (NCIDEEE 2009)' at Loyola College, Chennai. The paper was subsequently published.
3. Dr. Sam Taraporevala presented a paper on Social Advocacy at the Sightsaver's workshop on Social Inclusion
4. Dr. Sam Taraporevala presented a paper and was a panelist at the regional seminar on the theme "Inclusive Education – A case Study". Regional seminar organized by SNDT University department of Human development Mumbai.
5. Dr. Sam Taraporevala presented a talk on the social need, and copyright challenge in India At the joint collaborative seminar between the Director General of World Intellectual Property Organization (WIPO), the Publishers community and the visually impaired community at New Delhi
6. Dr. Sam Taraporevala presented a paper at the regional Seminar on "Smart technologies for 21<sup>st</sup> Century Education" on the Theme "Technology – A tool to create Inclusion".
7. Seminar organized by KJ Somaiya Comprehensive College of Education, Training and Research, Mumbai. The paper was subsequently published.

### 2010-2011

1. Dr. Sam Taraporevala presented a paper on "Print Access: The Indian Story" at "Edict 2010 Conference" (Enabling Access to Education through ICT), organized by Centre for Internet and Society Along with WIPO, UNESCO, ITU, G3ict and DAISY Consortium in New Delhi in October 2010.
2. Mr. Prashant Naik did a demonstration and presentation on the ANGEL player at the DFI Conference, New Delhi in October 2010.
3. Ms. Neha Trivedi shared the work of the XRCVC and its achievements at the Sightsavers South Area Partners meet in Vizag in November 2010
4. In January 2011 Mr. Prashant Naik made a presentation on diverse assistive technologies on the invitation of the Honorable Chief Justice of Bombay High Court to the government and a range of stake holders at the court hearing on a collective set of cases related to rights of persons with disabilities.
5. Dr. Sam Taraporevala presented a paper at the Senior Scholars Seminar series held at K.J. Somaiya College on Smart Technology for Reaching the Unreached in February 2011.
6. In March 2011 Dr Sam Taraporevala at CUSAT, Cochin's first annual national workshop for law students on "Re-thinking Intellectual Property Rights Studies" presented a paper on "Reading and Watching in the world of the disabled: *A New Perspective to Concerns and Solutions*"



7. Dr. Sam Taraporevala in April was invited at the Inaugural Special Needs in Education International Conference - Inclusive Learning Environments held at Dubai, UAE organized by Higher Colleges of Technology, UAE to be a panel member for the discussion Assistive Technology and its Human Interface where Dr Sam Taraporevala presented on the facet of Making Education Inclusive. At the same conference he also conducted a workshop on Assistive Technology: A step to Inclusive Education.
8. Attending a seminar on Employability and Dignified Livelihood at Bengaluru organized by the Sightsavers South India Meet 2011, where Dr. Sam Taraporevala co-chaired the session on New Avenues – Opportunities and Challenges.

### 2011-2012

1. Dr. Sam Taraporevala and Mr. Prashant Naik presented a report of the DAISY books produced by the XRCVC and a report of the Copyright issue in the Parliament at the DFI General Body Meeting at Trivandrum, Kerala.
2. Attending the Access India (AI) convention at Kerala where Dr. Sam Taraporevala presented on the topic of “Accessible ATM the Social Need, Prerequisites and the Current Reality.” Dr. Sam Taraporevala and Mr. Prashant Naik jointly presented on “Building Accessibility into Existing Electronic Devices - A Case Study of the IFT Electronic Physiotherapy Machine”.
3. Attending the Techshare 2012 conducted at India Habitat Center. Dr. Sam Taraporevala presented a session on "Technology - Showing the way for inclusive education of the disabled" The XRCVC team also met with Dr. Viney Gupta, Associate Professor of Ophthalmology from AIIMS and discussed the setting up a vision resource facility for practitioners and patients in the field of visual impairment.
4. Participating in a seminar “Access for Persons with Disabilities to Higher Education and workplaces” at IIM, Bangalore, jointly hosted by IIMB and Fourth Wave Foundation as a part of “never-the-less” together it gets better! At this seminar, Dr. Sam Taraporevala presented a case study of the XRCVC as a resource unit working for people with visual impairment. The paper was subsequently published.
5. Attending the 19th Senior Scholars’ Seminar Series on the theme: Building Asynchronous Learning Environments: Opportunities and Challenges. Dr. Sam Taraporevala was the Chairperson for the session on: ‘Catering to Diverse Needs through Asynchronous Learning Strategies.
6. Ms. Calveena D’Sylva and Ms. Melinda Warty presented on the work of the XRCVC & Inclusion in Education at a two-day National Conference on Inclusion: A Step Away, conducted by the Centre of Special Education, SNDT Women's University.
7. Ms. Neha Trivedi presented at the annual workshop on Corporate Social Initiatives (CSI) for the CSI practitioners of Larsen and Toubro.
8. The XRCVC team conducted a sensitization and awareness session with stress on how to be courageous and cautious for 15 leaders from diverse sectors ranging from private, government, and non-profit as part of the 2011-2012 MERIDIAN senior leaders development course.



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9. Dr. Sam Taraporevala gave an invited talk on the theme “Accessible ICT & Assistive Technology” at the Global Accessibility Awareness Day a one-day conference on creating awareness about the needs of persons with disabilities in Infrastructure, Transportation, Information Technology and Assistive technology which was jointly organized by Department of Information Technology, Government of Maharashtra & Barrier Break Technologies at Yashwantrao Chavan Pratishthan, Mumbai.
10. Dr. Sam Taraporevala Presented on University and college enabling units at the Daisy Forum Of India (DFI) General Body National Conference organized by the XRCVC at Lonavala.

### 2012-2013

1. Dr. Sam Taraporevala presented a Paper titled “Print Access – The Indian Story” at the seminar “Copyright Law Amendment of 2012” organized by ILS Law college, Pune.
2. Dr. Sam Taraporevala was part of the keynote address along with Peter Gartenberg (MD, SAP India Subcontinent) where he spoke about how Xavier’s Resource Center for Visually Challenged along with SAP is working on building accessibility solutions for visually challenged for their employment and self-dependence. This meet was attended by senior decision makers from government organizations to discuss and deliberate how Public Services Organizations, Defense and Utilities Service Providers can adopt the latest technologies to run their operations better and in an efficient and effective manner. This forum helped to update the audience on importance of accessibility.
3. Dr. Sam Taraporevala also contributed a chapter to a book. The Copyright Challenge: Legal and Social Imperatives in the book Library Services for Blind and Visually Impaired People which was edited by Dr. Priya R. Pillai and Dr. Neela J. Deshpande and published by APH Publishing Corporation.
4. Dr. Sam Taraporevala presented a Paper titled “*The Disability Exception and the Triumph of Collaborative Advocacy* ” at the seminar “copyright amendments, 2012 A fair Balance” organized by National University of Juridical Sciences (NUJS), at their NUJS-CUSAT Conference in association with the NJUS Law Review and IPTLS in Kolkata.

### 2013-2014

1. Dr. Sam Taraporevala was the Keynote speaker and State level seminar paper presentation conducted at the State level seminar on Educational and Career guidance for visually challenged at the Blind Student’s Learning Centre, Department of Education and Extension in association with Office of the student welfare, University of Pune, seminar paper was presented on the theme “Careers in Social Sciences.”
2. Dr Sam Taraporevala was the lead plenary speaker at a national conference ‘Harnessing Technology for the empowerment of persons with Visual Impairment’ on the theme of ‘Accessing banking services – a retrospect and prospect’. The Conference was organized by the National Institute of the Visually Handicapped in New Delhi



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3. Dr Sam Taraporevala gave the inaugural address at a seminar on 'Deconstructing Disability' organised by Lakshita, The Enabling Society, Miranda House on January 16 2014 at Miranda House, New Delhi.
4. Dr Sam Taraporevala and Neha Trivedi made presentations on inclusive banking at a 'High-level meeting on Inclusive Financial Services' in Mumbai in February 2014. The meeting was organised by XRCVC, along with G3ict and Indian Banks' Association (IBA). G3ict is an advocacy initiative launched in December 2006 by the United Nations Global Alliance for ICT and Development, in cooperation with the Secretariat for the Convention on the Rights of Persons with Disabilities at UN DESA.
5. Dr Sam Taraporevala and Rebecca Carvalho made a presentation at the Techshare conference in Delhi in February 2014 on XRCVC's 'Numbers and Reactions project which aims to make Mathematics and Science accessible to the Visually Challenged.
6. The XRCVC was appointed as Research Collaborator and Technical Consultant by the K J Somaiya Comprehensive College of Education, Training & Research in an ICSSR funded major research project on 'Making astronomy concepts accessible to the visually impaired school children' in India.
7. Dr Sam Taraporevala addressed the Achieve Together Conference for school children at the American School of Bombay, Bandra-Kurla Complex. The theme of the one-day conference was Courage, Compassion and Wisdom.

### 2014-2015

1. Dr Taraporevala was the keynote speaker and invited panellist at the Conference on Accessibility for Visually Impaired on the Theme of "Building an Accessible Arena" organised by Rotaract Club of Drishti and Karna Vidya Technology Centre at the Institute of Mathematical Sciences, Chennai.
2. Dr Taraporevala delivered a talk at TEDx Xavier's titled 'Integrating the visually Challenged into society' at TEDx St Xavier's, Mumbai on February 8 2015 at St Xavier's College. TEDx is a non-profit devoted to spreading ideas, usually in the form of short, powerful talks (18 minutes or less).



2015-2016

1. The ABC of Inclusive Publication' was also released on the occasion. (ISBN No 978-81-929012-5-1)



**(Pic 1) Dr Sam Taraporevala at the 3rd International Workshop on 'Digitization and E- Inclusion in Mathematics and Science 2016' (DEIMS2016); (Pic 2) the Limca Book of Records entry recognizing XRCVC's three-in-one menu**

2. Dr Sam Taraporevala and Aniket Gupta visited Tokyo from February 2 to 8 to participate in The 3rd International Workshop on "Digitization and E-Inclusion in Mathematics and Science 2016" (DEIMS2016). During the workshop, Dr Taraporevala delivered a keynote lecture on "STEM Education for Blind and Low Vision Students - The Socio-Technical Challenge: The Indian Perspective". They also paid a visit to the Japan Braille library.
3. Dr Taraporevala participated in a panel discussion organised by Microsoft on how to promote inclusion, with specific reference to disability. The XRCVC also put up an exhibition of access technology devices at the venue. The event was organized as part of Confluence, which is the company's annual Disability & Inclusion event. The event had outlined three key objectives, a) to help employees uncover unconscious bias w.r.t. to working with People with Disability, b) to educate employees about creating an environment – both physical and inter-personal where People with Disability can attain their potential and perform, and c) to share the importance of creating and supporting an inclusive workplace where everyone thrives
4. Dr Sam Taraporevala participated as a resource person in a library conference at JNU to create awareness about DFI and the online library. The subject of the special session was "Reaching the Unreached through ETDs: Research Support Services for persons with disabilities".



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5. Dr Sam Taraporevala delivered a lecture at IDC, IIT Mumbai to design students on "Introduction to the world of blind". The subjects covered were how VIs visualize and what mental models are built when a concept has to be understood, how do they comprehend and how comprehension differs based on age and experience of the blind person, which is the most effective medium to send messages for such an audience, and currently how do they build concepts and learn new things.
6. Calveena D'Sylva, Coordinator, Special Education, attended a workshop on "Design and Production of Perceivable and Affordable Tactile Diagrams" at IIT Delhi, and also conducted sessions on 'Simplistic Solutions for Tactile Graphics', 'Use of Alt Text for Accessible Images in MS Word', and 'Creation of Accessible MathType MS Word files'.

### 2016-2017

1. Dr Sam Taraporevala (Director, XRCVC) was the keynote speaker in February 2017 for a seminar on Science and Technology for Persons with Disabilities at IGNOU. He spoke on the theme of "Science and the Blind, A double-edged sword: The Socio-Technical Challenge".

### 2018-2019

1. Dr Taraporevala addressed over 225 participants at a seminar on the theme 'Explore, Experience and Empower' at Dhirubhai Ambani International School, Mumbai in September 2018.
2. He was Keynote Speaker at Sameeksha 2019 — a student festival at the Tata Institute of Social Sciences, Mumbai in February 2019.
3. He was also invited as chief guest for the annual day function of Snehankit, a non-government organization working towards empowering visually impaired youth.
4. During the year XRCVC developed and conducted a unique course called 'Diversity Discourse' at the Xavier's Institute of Communication (XIC). The objective was to sensitise participants to the many communities that society implicitly and explicitly ignores, and make a case for why it is necessary to bring these communities into mainstream public discourse. The content was imparted mainly through interactive workshops to over 250 students at XIC.
5. In July 2018, XRCVC was invited by IIT Gandhinagar (IITGn) to conduct 7 sensitisation workshops as part of the 'Foundation Program' for freshman students. Around 190 students benefitted from the same. A team from XRCVC also held discussions with Prof Jason, Dean of Students Affairs, about inclusion practices at IIT Gandhinagar.
6. Likewise, in October 2018, XRCVC conducted 7 awareness workshops at St Stephen's College, Delhi organized by 'Parivartan', a student body.
7. XRCVC conducted a lecture on accessibility in August 2018 at St Xavier's College for 60 students pursuing the BScIT course.
8. The Student Inclusion Cell of St Xavier's College organized a screening of the film 'Wonder' to spread the message of inclusion.



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9. An awareness workshop on Assistive Technology was conducted at Standard Chartered Bank, Mumbai in October 2018.
10. Two sensitisation and awareness workshops were conducted in October 2018 during the Empower 2018 Conference in IIT Delhi's Sonapat campus.
11. Sensitisation workshops were also conducted for Lilavatibai Podar High School, Reliance Jio, Snehankit, Jesuit Scholastics, Wilson College, Sophia College, IITB-Monash Research Academy, Thakur College, Viviana Mall.
12. On January 4, on the occasion of World Braille Day, an access technology exhibition was organized by XRCVC at Viviana Mall.
13. A workshop on STEM education was organized in March 2019 at St Xavier's College for members of the Blind Graduates Forum of India (BGFI)

### 2019-20

*Degrees of Accessibility*, the XRCVC's pioneering 360° User Perspective Report on Existing Accessible Geometry Construction Kits for students with blindness, was released in January 2020 by Mr. K M Sheth, the patriarch of Great Eastern Shipping, which had funded the research project.

### Awards / Recognition Received 2007-08

1. Dr. Sam Taraporevala appointed Chairman Copyright and publisher relations DAISY Forum of India (DFI).
2. Dr. Taraporevala, Director, XRCVC in November was nominated and recognized by Hindustan Times as part of their 'Spirit of Mumbai' campaign. The campaign recognized and felicitated what Hindustan Times identified as the top 15 people contributing most to the city.
3. XRCVC continued ongoing research and development work on visual / auditory / tactile teaching-learning aids and other independent living aids. We worked on integrating diverse technologies which could create a composite system to read through fingers, see through eyes, or hear through ears. This has led to the prototype of an audio / tactile / visual map of India and audio / tactile / visual menu, which found a mention in the Limca Book of Records.



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### 2008-2009

1. Dr. Sam Taraporevala, Director, XRCVC, has been nominated on the General Council of the National Institute of the Visually Handicapped (NIVH), Dehradun, the apex body in the country working on various welfare and development programmes for the visually impaired.
2. Dr. Taraporevala has been nominated on Braille Council of India's (BCI) board.
3. XRCVC's case study of NGO-Corporate partnership was published in CII's publication "Partnership case studies between: Business and Voluntary Organizations" as also in CII's Western Region's newsletter for November –December 2008 'Pascheem'.
4. Dr. Sam Taraporevala has been awarded CNN-IBN's citizen journalist award.

### 2009-2010

1. Dr. Sam Taraporevala, Director, XRCVC was awarded the 11<sup>th</sup> Shell Helen Keller Award by the NCPEDP.
2. The XRCVC received the Manthan Award in 2009 as part of the DFI team for Digital Inclusion for Development.

### 2010-2011

1. The XRCVC was granted observer status by the World Intellectual Property Organization (WIPO), Geneva, Switzerland to be part of the ongoing Standing Committee on Copyright and Related Rights (SCCR) deliberations to work out an International Treaty on Copyright exemption for the blind.
2. The XRCVC was invited by the Standing Committee of the Parliament (Ministry of HRD) to explain its stand on the special exemption clause it was recommending in the amendment to the Copyright Act of India. Apart from making the presentation, the XRCVC shared a policy paper written by Dr. Sam Taraporevala titled "Concerns with Licensing for the print disabled". The Parliamentary Standing Committee in its report accepted the recommendations of the XRCVC team.
3. XRCVC DAISY facility was evaluated by Mr. Prashant Verma, Consultant Training and Technical Support from DAISY Consortium and was given a very positive feedback for the same commenting that "*XRCVC is perhaps the only institution which is producing full text full audio DAISY books with synthesized voice in India*".
4. XRCVC was appointed on the advisory committee on assistive technology to Government of Maharashtra, Ministry of Social Justice and Empowerment.
5. Dr. Sam Taraporevala was conferred the NCPEDP Mphasis Universal Design Awards 2010 for creating an impact in the area of accessibility and universal design (For Banking and accessible ATMs) By National Centre for Promotion of Employment for Disabled People (NCPEDP) in New Delhi.



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6. Dr. Sam Taraporevala represented the XRCVC at the task force set up by the Ministry of Social Justice & Empowerment to work out the details of the proposed National Centre for Universal Design and Barrier-free Environment (NCUDBE) in Delhi.
7. Dr. Sam Taraporevala was appointed on the special committee as one of the few non-governmental members to select the national awardees for the “National awards conferred by the Ministry of Social Justice and Empowerment. These national awards are conferred by the President of India.

### 2011-2012

1. Dr. Sam Taraporevala was invited for discussions for the 12th five year plan so that necessary steps towards creating accessible infrastructure could be carried out in the next few years by the Government of India on the sub theme of Mobility, Accessibility and Research relating to disability under the Ministry of Social Justice and Empowerment.
2. Dr. Sam Taraporevala was made a member of the core team set up by the Ministry of Social Justice & Empowerment to plan and organize a major disability awareness program at New Delhi. Dr. Sam Taraporevala was also part of the core team set up by the Ministry of Social Justice & Empowerment for selecting the awardees for the National awards for the Empowerment of Persons with Disabilities.
3. The XRCVC was involved along with the Ministry of Social Justice and Empowerment, National Institute for the Visually Handicapped, Dehradun and the DAISY forum of India in the launch of the Online Braille Library (OBL) on a PAN India basis in Mumbai by the Minister of Social Justice and Empowerment, Government of India.
4. The XRCVC was made part of the IBA Sub-Committee on ATM systems for Visually Challenged Persons to work on the deployment of accessible talking ATMs in the country.
5. Dr. Sam Taraporevala was appointed as a member of the Expert Committee for the Resource Centre for Persons with Different Disabilities at the National Library, Kolkata.
6. Dr. Sam Taraporevala was appointed as Vice president and Chair - Policy implementation for the Daisy Forum of India (DFI). This followed the success of a policy shift brought about by way of both houses of parliament suitably amending the copyright law of India allowing persons with disability a special exemption clause.
7. The XRCVC received a star rating by way of certification for meeting quality criteria of DAISY standards for creation of DAISY Content of 39 hours and 24 minutes from 1<sup>st</sup> April 2011 to 31<sup>st</sup> March 2012.

### 2012-2013

1. Dr. Sam Taraporevala was invited by the Union Bank of India to be the Guest of Honor at the launch of its totally accessible bilingual ATM at Thane. This was in recognition of the role played in helping, conceptualized, test, develop and rollout such systems across the country. Thus ensuring the effective policy formulation and implementation.



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2. Dr. Sam Taraporevala was also a special invitee and participant at the SBI ATM launch. As he had played a key role in the launch of the fully accessible ATM of the State Bank of India at the JNU campus New Delhi. This launched the mega roll out of the bank's accessible ATMs across the country. This was in recognition of the key role played in the conceptualization, testing and development of this powerful financial inclusion tool.
3. Dr. Sam Taraporevala was presented the Role Model Award that was conferred by the Retina India Foundation.
4. Dr. Sam Taraporevala was also presented with the Vocational Excellence Award, conferred by Rotary Club of Bombay Hanging Garden.
5. Dr. Sam Taraporevala was appointed as a resource person by the Department of Disability, Ministry of Social Justice and Empowerment, Government of India on the subject of the Inclusion of visually impaired children in various government programs. This was on the request of the Ministry of Woman and Child Development, Child Welfare Section to provide a resource person to give inputs to the Parliamentary Forum on Children.
6. Dr. Sam Taraporevala was an invitee at stakeholder meetings to plan for India's stand at the SCCR meets organized by WIPO to draft a special treaty by way of copyright exceptions for the blind. The meetings were called by the copyright office Ministry of HRD, Government of India to plan India's stand on the draft clauses as developed by the standing committee on Copyright and Related Rights (SCCR ) of the World Intellectual Property Rights Organization ( WIPO ) meetings that were held at New Delhi.

### 2014-2015

1. Dr Sam Taraporevala has been included as part of the expert committee for its ADIP scheme. The Ministry has been implementing the Scheme of Assistance to Disabled Persons for Purchase/fitting of Aids and Appliances (ADIP) since 1981 with the objective of providing durable/sophisticated and scientifically manufactured modern, standard aids and appliances to promote physical/social and psychological rehabilitation of Persons with Disabilities (PwDs) by reducing the effects of disabilities and enhance their economic potential. the Department of Disability Affairs, Ministry of Social Justice and Empowerment, Government of India, a list of Access Technologies that can be used under the government's ADIP scheme.

### 2015-2016

1. The Rotary Club of Mumbai Sion presented an award to Dr Sam Taraporevala as part of its Vocational Excellence Awards. The award was presented by Dattajirao Desai, a former municipal official.
2. Dr Sam Taraporevala was awarded the Louis Braille Award 2015 by the Pragayachakshu Mahila Sewa Kunj, Surendranagar, Gujarat.



### 2017-2018

1. For its efforts to promote accessible publishing globally, the DAISY Forum of India (DFI), of which the XRCVC is an integral part, bagged the 2018 ABC International Excellence Award for Accessible Publishing in the Initiative category at the London Book Fair in 2018. This award, said the DFI president, was an acknowledgement of the collective effort and the joining of forces of the Government of India, industry and civil society to end the book famine for the economically, geographically, socially and linguistically diverse group of people in India who are print disabled.