



Economic, social and cultural rights in India: Opportunities for advocacy in intellectual property rights

Access to mobile technology

Sunil Abraham and Vidushi Marda

*Association for Progressive Communications (APC)
December 2016*

This is part one of a three-part case study that considers the International Covenant on Economic, Social and Cultural Rights (ICESCR) through aspects of intellectual property in India, namely, mobile patents, free and open source software, and India's Traditional Knowledge Digital Library. Through these, it demonstrates the potential of these technologies in realising ESCRs and makes suggestions as well. The discussion below should be read in conjunction with the synthesis overview. These case studies have been produced as part of the Association for Progressive Communications (APC) research project Connecting your rights: Economic, social and cultural rights (ESCRs) and the internet.¹ This is a three-year project funded by the International Development Research Centre (IDRC).

¹For more information, see: <https://www.apc.org/en/projects/connecting-your-rights-economic-cultural-and-social>

Table of contents

1. Introduction.....	3
2. Defining the right.....	4
3. Rights holders and duty bearers.....	6
4. Existing situation.....	7
5. Rights framework.....	8
6. Ask or demand from civil society.....	9
7. Advocacy actors	9
8. Nodes of engagement	10

1. Introduction

Mobile technology represents one of the fastest growing forms of what Ithiel de Sola Pool has called “Technologies of Freedom”.² Mobile phones today have increasingly substantial human consequences as a medium of knowledge, empowerment and connectivity. The total mobile subscriber base in India reached 960.58 million in February 2015, with 852 million active subscribers.³ In 2008, basic mobile voice phones generated 70% of traffic, but by 2010, 78% of traffic was generated by smartphones.⁴ Despite limited 3G penetration in India, mobile data usage surpassed broadband usage in July 2012, accounting for 70% of web usage in November 2013.⁵ This increase in data usage is particularly interesting when juxtaposed with the trend of sales of devices that support such usage. As of 24 February 2014, 76% of the total mobile devices purchased in India cost less than Rs. 3,000 (or almost USD 45),⁶ indicating that budget smartphones with notable features form a significant portion of the Indian mobile device market.

In a bid to access the best technologies available globally, in May 2010 the government and Reserve Bank of India did away with the requirement for royalty caps in technology transfer agreements with foreign collaborators in anticipation of increased foreign investment.⁷ This resulted in an increase of outflows, with royalty payments in 2012-2013 reaching USD 4.4 billion, almost a fifth of the foreign direct investment in that year.⁸ The balance of payments from intellectual property (IP) in India indicate that this deficit is indeed a worrying sign for cost of technology in India and indigenous innovation.

The vulnerability of indigenous innovation is perhaps best demonstrated by the Spice Popkorn M 9000, a budget smartphone in India. It had a receiver for terrestrial television, radio, a dual sim card, pocket projector, and inbuilt speaker. It ships with an external speaker, a tripod stand, along with a laser torch. However, due to IP enforcement, it is no longer available, making innovation for the bottom of the pyramid of potential consumers increasingly difficult.

March 2013 marked the formal entry of mobile patent wars into India. Ericsson, the Swedish communications infrastructure and service provider, filed a suit against Micromax, an Indian smartphone manufacturer for infringement of eight of its standard essential patents (SEP). The same eight SEPs formed the basis of suit against several other Indian resellers of phones manufactured in China, Gionee in late 2013, Intex in April 2014, and Xiaomi in December 2014. Following this, Vringo, a New York-based technology company filed suits against ZTE and Asus While facing a patent lawsuit has been called the “rite of passage for a company that is coming of age”, it also means that manufacturers will now become risk averse. Incumbents file for injunctions, while products alleged to be infringing patents are stranded in warehouses and ports. These situations are disincentives for manufacturers who could potentially be innovating for the bottom of the pyramid.

²De Sola Pool, I. (1983). *Technologies of Freedom*. Cambridge, Mass.: Harvard University Press

³Trak.in. (2015, 15 February). Indian Mobile Subscriber Stats: 960M Total, 852M Active, MNP Requests Cross 150M. trak.in/tags/business/2015/04/11/indian-mobile-subscriber-growth-numbers

⁴icrier.org/pdf/parag_kar_qualcomm.pdf

⁵gs.statcounter.com/#desktop+mobile-comparison-IN-monthly-201009-201312

⁶Trak.in. (2015, 15 February). Op. cit.

⁷rbi.org.in/Scripts/NotificationUser.aspx?Id=5677&Mode=0

⁸Seth, D., & Chugan, B. (2013, 8 August). Government may reimpose curbs on royalty payments to foreigners. *Economic Times*. articles.economictimes.indiatimes.com/2013-08-08/news/41202236_1_royalty-account-deficit-dipp

2. Defining the right

Technology that provides access to the internet, by its very nature enables furtherance of many rights articulated in the International Covenant on Economic, Social and Cultural Rights (ICESCRs) to an incalculable degree. Four primary rights⁹ have been specifically identified as relevant when it comes to mobile technology:

- *The right to self determination (Article 1)*: The right to self determination enshrined in Article 1, in its simplest form, allows individuals to pursue and manage their economic, social and cultural goals. The general application of the mobile phone in enabling this right is evident in that it empowers individuals to achieve these goals. This application is heightened when considering marginalised groups and communities. For example, in a country where female foeticide is still prevalent, a woman owning a mobile phone possesses more than the mere satisfaction of the need to communicate. Mobile technology has advanced to the point that a woman's safety could also be aided by certain mobile applications.¹⁰ By extension, the mere possession of a mobile phone could be perceived as an instrument necessary for self determination. Because mobile technology empowers women, access to this technology becomes a battle ground for patriarchal control. For example, the recent *Uttar Pradesh khap panchayat* ban on women wearing jeans and owning mobile phones (claiming that they were responsible for "eve-teasing" incidents)¹¹ stands as testament that changes need to be made.
- *The right to work (Article 6)*: The right to work, assured by Article 6, also speaks of the need to incorporate technical and vocational guidance, training programmes, and a change in policies to achieve it. This is realised in two distinct ways. The first is through employment generated by the mobile phone industry. The hardware industry in India is projected to grow to be a USD 400 billion industry by 2020.¹² In February 2016, the Department of Electronics and Information Technology (DeitY) reported that 50 new mobile manufacturing factories had opened in India in the preceding 10 months, creating employment for 20,000 individuals, and making the installed capacity for manufacturing nine million mobile phones per month.¹³ The second involves the use of the mobile phone by individuals to access work. For example, a study conducted by the Centre for Knowledge Societies revealed that the acquisition of affordable handsets facilitated many traditional homemakers and others in similar positions to explore alternative employment and business possibilities beyond their homes.¹⁴ Similarly, a report titled *ICTs and Urban Microenterprises: Identifying and Maximizing Opportunities for Economic Development*¹⁵ found amongst other things that the more women entrepreneurs used mobile phones and workplace computers, the more their microenterprises grew, especially regarding businesses in the trade

⁹International Covenant on Economic, Social and Cultural Rights (1976).

¹⁰Gupta, H. (2016, 7 March). 10 best women safety apps. *Gadgets Now*. www.gadgetsnow.com/slideshows/7-best-women-safety-apps/photolist/51285625.cms

¹¹PTI. (2014, 09 August).UP khap panchayat bans jeans, mobile phones for girls. *The Hindu*. www.thehindu.com/news/national/other-states/uttar-pradesh-community-panchayat-bans-jeans-mobile-phones-for-girls/article6298539.ece

¹²Electronic System Design and Manufacturing, Department of Electronics and Information Technology (DeitY). <http://deity.gov.in/esdm>

¹³Business Standard. (2016, 3 February). India got 50 new mobile phone factories in the last 10 months: DeitY, *The Business Standard*. www.business-standard.com/article/companies/india-got-50-new-mobile-phone-factories-in-last-10-months-deity-116020301006_1.html.

¹⁴Centre for Knowledge Society. (2010). *Socio-Economic Impact of Affordable Handset Adoption*. cks.in/wp-content/uploads/2012/10/AffordableHandsetAdoption.pdf

¹⁵Vigneswara Ilavarasan, P., & Levy, M.R. (2010). *ICTs and Urban Microenterprises: Identifying and Maximizing Opportunities for Economic Development*. web.idrc.ca/uploads/user-S/12802403661ICTs_and_Urban_Microenterprises_104170-001.pdf

sector of the informal economy. A study conducted by LIRNEasia established that “mobile telephone service has been found to have the characteristics of a necessity in the BOP of Bangladesh, Pakistan, India, Sri Lanka, Philippines and Thailand.”¹⁶ This could indicate that these same individuals utilise the handsets to aid their employment. Finally, in an era where the lack of a mobile phone would limit an important path to being accessible in the labour market, we could infer that the owning of a phone number is imperative in order to be more visible to prospective employers.

- *The right to education (Article 13)*: The right to education in Article 13 can be realised in a number of ways due to advancement in technology. While m-learning, or learning using mobile phones, has resulted in a rich innovation in mobile apps (or software tools) for formal education, the use of mobile phones has been extended to informal learning too. Digital Green is an international development organisation that uses projector phones to screen educational material – such as content on improved agricultural practices – in rural communities across South Asia and Sub-Saharan Africa.¹⁷ It does so by partnering with local public, private and civil society organisations, to create locally and peer-produced videos. In a controlled evaluation, the approach was found to be 10 times more cost-effective¹⁸ and uptake of new practices seven times higher compared to traditional extension services. Moreover, text-to-speech technology has challenged illiteracy as a barrier to learning, opening up a world of educational resources for people who cannot read.
- *The right of everyone to take part in cultural life, to enjoy the benefits of scientific progress and its applications, and protection of authors for moral and material interests resulting from any scientific, artistic or literary production (Article 15(1)(b)) and Article 15(1)(c))*: Article 15 (1)(a) recognises the right of everyone to take part in cultural life. According to the Economic and Social Council, “participation” under this right includes three aspects. The first is that participation includes the right of everyone to act freely, choose his/her own identity, and to take part in the political life of society. The second aspect is “access”, the right of everyone to understand her culture through education and knowledge received through any technical medium used for sharing information or communication; and the third aspect is the right of everyone to “contribute” towards the spiritual, material, intellectual, emotional expressions of the community.¹⁹ 15 (1)(b) recognises the right of everyone “[t]o enjoy the benefits of scientific progress and its applications” and should be read with the next provision, 15 (1) (c), which provides for the “[p]rotection of the moral and material interests resulting from any scientific, literary or artistic production of which he (sic) is the author”. The ESCR covenant mandates that the states take necessary steps for the conservation, development and diffusion of scientific knowledge, and further, that freedoms indispensable for scientific research and creative activity be respected. There are two ways to understand the relation between these two sections. The first approach would be to give authors exclusive monopoly rights over their creations using copyright or patent law. The second approach is for states to ensure that material interests are protected through remuneration models that do not depend on intellectual property. Some scholars like Andrew Rens believe the latter to be the correct interpretation as he points out that

¹⁶Agüero, A., & de Silva, H. (2015). *Bottom of the Pyramid Expenditure Patterns on Mobile Phone Services in Selected Emerging Asian Countries*. www.lirneasia.net/wp-content/uploads/2010/03/AGUERO-TBOP3_04_1.5.pdf

¹⁷Digital Green, Overall Statistics. www.digitalgreen.org/analytics/overview_module

¹⁸Gandhi, R., et al. (2009). Digital Green: Participatory Video and Mediated Instruction for Agricultural Extension. *Information Technologies & International Development*, 5(1). itidjournal.org/itid/article/view/322

¹⁹United Nations Economic and Social Council, Committee on Economic, Social and Cultural Rights, Forty Third session, 2-20 November, 2009, “General Comment No. 21”, Page 3. Can be accessed at: tbinternet.ohchr.org/_layouts/treatybodyexternal/Download.aspx?symbolNo=E%2fC.12%2fGC%2f21&Lang=en.

the 66-page report of the Special Rapporteur in the field of cultural rights does not mention intellectual property even once.²⁰ Mobile phones, and the increased access to knowledge they enable, are in clear pursuance of these goals. The right to take part in cultural life is in particular realised by access to mobile technology as participation in cultural life includes access to knowledge through any technical medium for the dissemination of information or communication. Mobile phones are today the primary technology through which people access the internet, and the internet's potential of providing knowledge, information, communication, and exposure to the wider world cannot be overemphasised.

3. Rights holders and duty bearers

The coming of the Narendra Modi government heralded the beginning of attempts to achieve a Digital India, after Modi consented to a programme to transform India into a “digitally empowered and knowledge society”, as envisaged by the Department of Electronics and Information Technology (DeitY) in 2014.²¹ The National Policy on Information Technology launched in 2012 by the same Department echoed this programme, and included the following provisions:

3.5 To promote industry-academia collaborative R&D with emphasis on innovation, products, patents and IPs

3.6 To encourage adoption of ICT based Green technologies as well as to promote green technologies by making them competitive through appropriate fiscal and non-fiscal policies.²²

Against this backdrop, the following set of stakeholders are the “duty bearers” when it comes to the formulation and implementation of intellectual property policy in India:

- *The Office of the Controller General of Patents, Designs & Trade Marks (CGPDTM)*: The Controller General (also called the registrar) supervises the working of the Patents Act (1970) and also offers advice to the government on matters relating to patents.
- *Department of Industrial Policy and Promotion (DIPP)*: The DIPP oversees the promotion and protection of patents, designs, trademarks and geographical indications. Its functions include outlining policy as well as implementation through the Controller General of Patents, Designs and Trade Marks. An expert from the DIPP also represents India at the World Intellectual Property Organization (WIPO).
- *Intellectual Property Appellate Board (IPAB)*: The IPAB exercises jurisdiction over patents, trademarks and geographical indications²³ in India. It hears appeals against decisions of the registrar.

²⁰Shaheed, F. (2014). Report of the Special Rapporteur in the field of cultural rights, Farida Shaheed: Copyright policy and the right to science and culture. A_HRC_28_57_ENG (7).

²¹Press Information Bureau, Government of India. (2014, 20 August). Digital India – A programme to transform India into digital empowered society and knowledge economy. pib.nic.in/newsite/PrintRelease.aspx?relid=108926

²²Department of Electronics and Information Technology (DeitY). (2012). National Policy on Information Technology, 2012. deity.gov.in/sites/upload_files/dit/files/National_20IT_20Policyt%20_20.pdf

²³WIPO definition: A geographical indication (GI) is a sign used on products that have a specific geographical origin and possess qualities or a reputation that are due to that origin. In order to function as a GI, a sign must identify a product as originating in a given place. In addition, the qualities, characteristics or reputation of the product should be essentially due to the place of origin. Since the qualities depend on the geographical place of production, there is a clear link between the product and its original place of production. Available at: www.wipo.int/geo_indications/en

- *Ministry of External Affairs (MEA) and the Ministry of Finance*: The government agency responsible for India's interaction with foreign countries, the MEA is significant due to its role of determining economic relations and bilateral/multilateral relations. Similarly, the Ministry of Finance has within its ambit the Departments of Economic Affairs, Expenditure, and Revenue (among others) which play a key role in setting royalty rates, Free Trade Agreements etc.
- *Prime Minister's Office (PMO)*: The PMO is made up of the prime minister's immediate staff. In light of Digital India, and similar programmes such as Smart Cities and Make in India, the PMO looks into all issues of policy.
- *Department of Electronics and Information Technology (DeitY)*: A branch of the Ministry of Communications and IT, its vision is the "e-Development of India as the engine for transition into a developed nation and an empowered society."²⁴

The rights holders are individuals, but especially those unable to afford an internet-enabled device.

4. Existing situation

It has been postulated that for a hypothetical smartphone costing USD 400, royalty costs for essential patents and other intellectual property could represent up to USD 120 in the form of "patent tax" imposed on each device.²⁵ According to Mike Masnick, there are 250,000 patents that impact on smartphones.²⁶

In 2013, the Centre for Internet and Society commissioned a study on the patent landscape concerning mobile phones in India.²⁷ A total of 2,443 patents were found, and an additional 58 LTE patents were identified.²⁸ As of 2015, CIS has found approximately 23,500 patents pertaining to mobile phone technology in India.²⁹ This is a significant finding as the number of patents in India is much lower than that found by Masnick, and all 23,500 patents found through this study were Standard Essential Patents.³⁰ Ever since Nokia sued Apple over 10 patents in 2009,³¹ patent wars have become the preferred tool used by large corporations to slow down competition and enhance their market share. Since 2009, patent wars have been fought over touchscreen patents (ELAN vs. Apple), 3G tech (Qualcomm vs. Nokia), Java patents (Oracle vs. Google), and software patents (Apple vs. HTC), amongst others.

"Standards" have become a crucial way of ensuring interoperability in information and communications technologies (ICTs), such as smartphones, allowing the array of different technologies made by different manufacturers to communicate with each other. The process of selecting a particular technology as a standard involves an industry-wide commitment by the patent holder to license out that standard on Fair, Reasonable and Non-Discriminatory (FRAND) terms to anyone who wants to use the standard.

²⁴<http://deity.gov.in/content/vision-mission>

²⁵Armstrong, A., et. al. (2014). The Smartphone Royalty Stack: Surveying Royalty Demands for the Components Within Modern Smartphones. *SSRN*. papers.ssrn.com/sol3/papers.cfm?abstract_id=2443848

²⁶Masnick, M. (2012, 18 October). There Are 250,000 Active Patents That Impact Smartphones; Representing One In Six Active Patents Today. *Techdirt*. www.techdirt.com/blog/innovation/articles/20121017/10480520734/there-are-250000-active-patents-that-impact-smartphones-representing-one-six-active-patents-today.shtml

²⁷Lakshane, R. (2014, 10 November). Methodology: Patent Landscaping in the Indian Mobile Device Market. *Centre for Internet and Society Blogs*. cis-india.org/a2k/blogs/patent-landscaping-in-the-indian-mobile-device-market

²⁸Essential patents covering the Long Term Evolution (LTE) standard.

²⁹Contreras, J. L., & Lakshane, R. (2016). Patents and Mobile Devices in India: An Empirical Survey. *SSRN*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2756486

³⁰Standard Essential Patents are those that claim an invention that must be used to comply with a technical standard.

³¹Wray, R. (2009, 22 October). Nokia sues Apple over alleged breach of patent. *The Guardian*. www.theguardian.com/business/2009/oct/22/telecoms-nokia

Unfortunately, combined with the usual questions of ownership/infringement of patents, and royalty stacking,³² there also seems to be a lot of disagreement over the definition of these terms, leading to much uncertainty as well as potentially abusive litigation in the country. Given that these questions have huge implications for innovation and access to knowledge, there is a growing need to reduce uncertainties for manufacturers and consumers.

Patent pools are a potential solution.³³ However, patent pools have two significant limitations. Firstly, they do not operate on FRAND terms, restricting their scope of potential benefits, and secondly, the multiplicity of patent pools reduces the incentive of patent holders to form part of a single pool, as that would not prevent them being sued by other pools.³⁴

5. Rights framework

It is clear that governments, especially in the global south, must take on an active role in mediating the relationship between the large corporations that possess extensive mobile patent holdings, and the smaller players who seek to develop viable, low-cost devices that can facilitate the actualisation of the right to knowledge and culture for the world's most deprived communities.

India's IP framework in general is considered to be robust and efficient in addressing consumer concerns. According to Consumers International IP Watchlist for 2012, India's Copyright Act is a relatively more balanced instrument in comparison to those of other nations.³⁵ India recognises and acknowledges the interests of consumers through its broad private use exception,³⁶ and by facilitating the compulsory licensing of works that would otherwise be unavailable.

India has not recognised software patents, protecting the rights of consumers and encouraging innovation. Granting software patents would be tantamount to conferring patent rights on abstract algorithms that would be beneficial only to large corporations and patent trolls who enforce patent rights beyond the patent's actual value.³⁷ The invention should be in the hardware, with the software being peripheral. If software can run on a general purpose computer, it should not be patentable. Under the Indian Patent Act, Section 3(k), "a mathematical or business method or computer programme (sic) per se or algorithms" are not inventions within the meaning of the Act. However, under the Manual of the Patent Office, Practice and Procedure, last modified in 2011, pure software patents are slipping through.

6. Ask or demand from civil society

In June 2013, The Centre for Internet and Society (CIS) wrote an open letter to the Union Minister for Human Resource Development Pallam Raju for the establishment of a patent pool for low-cost access

³²Royalty stacking refers to the situation where a licensee must pay royalties to multiple parties in order to commercialise a product.

³³Patent pools can be defined as an agreement between two or more patent owners to license one or more of their patents to one another or to third parties. Read www.wipo.int/export/sites/www/ip-competition/en/studies/patent_pools_report.pdf at Page 1.

³⁴Heller, M. (2008). *The Gridlock Economy*. Basic Books. Discusses reducing transaction costs.

³⁵a2knetwork.org/sites/default/files/IPWatchlist-2012-ENG.pdf

³⁶Under Section 52 of the Indian Copyright Act, "(1) The following acts shall not constitute an infringement of copyright, namely: (a) a fair dealing with a fair dealing literary, dramatic, musical or artistic work [not being a computer programme] for the purposes of- (I) private use, including research;(ii) criticism or review, whether of that work or of any other work." See <http://copyright.gov.in/documents/copyrightrules1957.pdf>

³⁷Prakash, P. (2010, 22 February). Arguments Against Software Patents in India. *The Centre for Internet and Society*. cis-india.org/a2k/blogs/arguments-against-software-patents.

devices through compulsory licences.³⁸ The letter urged the formation of a patent pool of essential technologies (the “Aakash” patent pool) as a method of enabling the manufacture of affordable devices. Greater accessibility to devices is crucial for the advancement of education through technology, as envisioned in the National Mission on Education through Information and Communication Technology (NMEICT). This suggestion was made owing to the multiplicity of claims and cross-claims making it difficult to manufacture generic and affordable tablet devices.

In February 2015, CIS, in an open letter to Prime Minister Modi, urged the formation of a patent pool of critical mobile technologies, and also proposed a mandate of 5% compulsory licence on these patents.³⁹ Following this, in April 2016, CIS made a submission⁴⁰ in a critical policy window to the Department of Industrial Policy and Promotion on standard essential patents. It argued that in the wake of Digital India and Make in India gaining momentum, the need for indigenous mobile phone innovation is required in order to ensure that Indian consumers have access to mobile phones within their purchasing power. CIS urged the government to come up with a balanced National Intellectual Property Rights policy, and a National Competition Policy; and also recommended that courts adopt a more cautious stance towards granting injunctions in cases regarding these patents. This submission is based on the belief that while private ownership creates wealth, too much ownership of physical or intellectual resources creates a gridlock economy in which everyone loses.⁴¹

7. Advocacy actors

The following can be considered advocacy actors in the context of this research.

- *Indian Cellular Association (ICA)*: The ICA is the apex body for mobile enterprises in India with members representing each step of the supply chain. Its aim is to “provide value and service to the mobile cellular industry in India by fuelling its growth, improving competitiveness, helping create a legal and ethical market and regulatory environment, thereby providing long-term benefits of mobile connectivity to the Indian masses.”⁴²
- *Centre for Excellence in Wireless Technology (CEWIT)*: The CEWIT is a research organisation set up under the Indian Institute of Technology, Madras. The organisation seeks to develop intellectual property and innovations in ICT that are incorporated into global standards. It does so in an effort to reduce the net royalty flow from India. A reduction in IP royalty would also translate into a reduction in the cost of manufacturing internet-enabled devices in India.
- *Tejas Networks*: Tejas Networks is a telecommunications equipment company based in India. Organisations such as Tejas would also be greatly benefited by a reduction in royalty payable, as well as essential IP being more freely accessible.
- *Grameen Gyan Abhiyan*: Grameen Gyan Abhiyan has been conceived as a rural knowledge network which seeks to introduce ICTs across villages with the goal of enabling greater social

³⁸Chaudhari, N. (2013, 27 June). Letter for Establishment of Patent Pool for low cost access devices through compulsory licenses. *The Centre for Internet and Society*. cis-india.org/a2k/blogs/letter-for-establishment-of-patent-pool-for-low-cost-access-devices

³⁹Lakshane, R. (2015, 10 February). Open Letter to Prime Minister Modi. *The Centre for Internet and Society*. cis-india.org/a2k/blogs/open-letter-to-prime-minister-modi

⁴⁰Sinha, A. (2016, 26 April). Summary of CIS Comments to DIPP’s Discussion Paper on SEPs and their availability on FRAND terms. *Centre for Internet & Society*. cis-india.org/a2k/blogs/summary-of-cis-comments-to-dipp2019s-discussion-paper-on-seps-and-their-availability-on-frand-terms

⁴¹Heller, M. (2008). *The Gridlock Economy: How Too Much Ownership Wrecks Markets, Stops Innovation, and Costs Lives*. gridlockeconomy.com/about.html

⁴²www.ica-ind.org/about

inclusion. The programme is premised on ensuring “reliable and accessible Connectivity, appropriate and responsive Content, Capacity building for raising a cadre of grassroots professionals, Convergence of all actors of knowledge connectivity, and community owned, sustainable Care and management of knowledge centres.”

- *Digital Empowerment Foundation (DEF)*: The organisation's mission is to empower marginalised communities by providing access knowledge and information through a range of digital tools. Ensuring access to the internet and digital literacy are therefore core objectives.
- *Telecentre.org Foundation*: Telecentre.org Foundation aims to establish telecentres in order to provide digital services, as well as opportunities for skills development, employment, innovation and entrepreneurship.
- *Mobile Monday*: Mobile Monday is a network of professionals in the wireless industry. Their objectives include bridging the digital divide, and promoting entrepreneurs and local businesses by employing mobile technology in rural India.

8. Nodes of engagement

There are five main nodes of engagement within which access to mobile technology can flourish:

- *Digital India*: The government launched a programme in July 2015 to make government services electronically available to citizens. The methods proposed are to increase internet connectivity and also improve online infrastructure. As part of this initiative, post offices in the state of Madhya Pradesh have begun selling mobile phones in collaboration with BSNL, a state run operator, and Pantel technology.⁴³ In November 2015, the Human Resources Development (HRD) Ministry also launched several apps making educational material available online.⁴⁴
- *Make in India*: This was launched by Prime Minister Narendra Modi in September 2014 to encourage international and domestic manufacturers to manufacture products in India. Following this, a flood of investment has taken place, with Chinese manufacturers like Techno, Gionee, Coolpad, Holitech, Wingtech, Camera King, Galaxy Core, Poxiao, Vivo and Sprocomm coming on board,⁴⁵ followed by LeTV in 2016,⁴⁶ along with several Indian companies.⁴⁷
- *National Intellectual Property Rights Policy*: DIPP has invited comments on the policy which is a space for constructive policy engagement. Further information and engagement by way of consultations, meetings and right to information requests is also an encouraging option.⁴⁸
- *Cases pending before the Competition Commission of India*: These cases are also an important node of engagement. Engaging policy advocates and civil society researchers can be a profitable and beneficial exercise.

⁴³PTI. (2015, 15 October). Madhya Pradesh Post Offices to Sell Mobiles as Digital India Initiative. *Gadgets 360*. gadgets.ndtv.com/telecom/news/madhya-pradesh-post-offices-to-sell-mobiles-as-digital-india-initiative-752715

⁴⁴PTI. (2015, 8 November). Govt launches many mobile apps as part of Digital India initiative. *Your Story*. yourstory.com/2015/11/digital-india-mobile-apps

⁴⁵Indo-Asian News Service. (2016, 13 January). Chinese Mobile Makers Commit Major Investment in 'Make in India' Initiative. *Gadgets 360*. gadgets.ndtv.com/mobiles/news/chinese-mobile-makers-commit-major-investment-in-make-in-india-initiative-789306

⁴⁶International Business Times. (2016, 18 January). Make in India: LeEco plans to setup local R&D and assembly plant. www.ibtimes.co.in/make-india-leeco-plans-setup-local-rd-assembly-plant-663579

⁴⁷Rajan, N. (2015, 4 June). It's economics: Why smartphone makers are taking the 'Make in India' call. *The Indian Express*. indianexpress.com/article/explained/its-economics-the-reason-smartphone-makers-are-taking-the-make-in-india-call

⁴⁸CIS has engaged with the National IPR Policy through all these methods. See: bit.ly/1SZOiDe

- *Software patents*: A recent meeting on Guidelines for Examination of Computer Related Inventions (CRIs)⁴⁹ organised by the Office of the Controller General, Patents, Designs and Trademarks indicated that the threshold for acquiring software patents may be lowered. This is worrying as it gives rise to the possibility of diluting the requirements for acquiring software patents and also opens up the option of conferring legitimacy on patents granted in other jurisdictions and hence being granted within India as well. It is crucial to keep the threshold for acquiring software patents high by way of policy, research and advocacy interventions to ensure that this proposed dilution does not occur.

⁴⁹cis-india.org/a2k/news/guidelines-for-examination-of-computer-related-inventions-cris