Digital India as if women matter: A policy discussion paper

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IT for Change

PAPER SUBMITTED TO HEINRICH BÖLL FOUNDATION

AUGUST 2018

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1. Overview

Digital India is a flagship program of the Union government that seeks to transform India into *"a digitally empowered society and knowledge economy"*.[i] It was launched in August 2014, with the objective of working towards three outcome areas: provisioning digital infrastructure as a core utility, on-demand e-service delivery, and digital empowerment of all citizens.[ii] A range of strategies and schemes have been integrated under the umbrella of *Digital India*, in pursuit of these outcomes. In 2018-19, the program received a fillip when its annual budgetary allocation was doubled to 3073 crore INR for a new outcome area - the development of cutting edge data infrastructure to support AI innovations.[iii]

The program document itself does not contain any explicit reference to women's empowerment or gender equality. However, popular narratives around the idea of *Digital India*, especially statements and speeches by members of the Union Cabinet, tend to repeatedly invoke the trope of *"a digital revolution for women's empowerment"*[iv] – foregrounding women's digital enskillment, entrepreneurship, and inclusion in welfare delivery systems.

This policy discussion paper[v] seeks to present a critical overview of *Digital India*, evaluating the extent to which the outcome areas of the program address gender-transformative change. It also offers suggestions for building an enabling environment to expand opportunities and strategic life choices for women, and contributing to gender equality, as economic, social and political arenas are fundamentally redefined by digital technologies.

2. An evaluation of the outcome areas of Digital India from a gender perspective

2.1. Provisioning digital infrastructure as a core utility

2.1.1 Connectivity infrastructure

When the *Digital India* program was set up, the access divide was sought to be bridged through universalizing access to mobile connectivity, developing fixed broadband highways for welfare delivery, health care and education, and establishing last mile public access points in all 2,50,000 *Gram Panchayats*. Unfortunately, as elaborated below, none of these strategies have been informed by a perspective that addresses the gender divide in connectivity, an urgent concern in a country with a yawning 42 per cent digital gender gap among Internet users.[vi] As of December 2017, out of the 350 million Indians with access to the Internet,[vii] a mere 29 % were women. Among

rural Internet users the gender divide is even more pronounced, with the ratio of male to female users being a heavily skewed 64:36.[viii]

(a) Failure to effectively utilize the Universal Service Obligation Fund for bridging the gender gap in connectivity

The subscription base of mobile users has seen a spike, with new players, like Reliance Jio, in mobile data services. This has led to a lowering of wireless broadband prices. The annual average data rates in the country stand at a mere 1.3% of annual GDP per capita, well below the recommended 2% threshold for affordability prescribed by the Alliance for Affordable Internet.[ix] However, the fall in prices has not succeeded in bridging divides in access, with the majority of new subscribers after the launch of Reliance Jio coming from urban areas.[x]

Between 2017-18, Internet and smart phone penetration started to plateau in India,[xi] in spite of a substantial percentage of the population being offline. Numerous inequalities in connectivity continue to persist: younger and more educated Indians make up for most of the user base, while women constitute a major proportion of those who are being left behind.[xii] Clearly, the market by itself has not been able to bridge divides in access, including the gender divide. Cultural policing has also resulted in restrictions on the use of mobiles by women and girls in different parts of the country.[xiii]

Unfortunately, the Universal Service Obligation Fund (USOF) has remained under-utilised and its gender budgeting provision ineffectively deployed.[xiv] Recommendations from the Telecom Regulatory Authority of India for instituting a universal monthly mobile data allowance for citizens have gone unheeded, though such a move with special quotas instituted for women and members of marginalized rural communities could have been immensely beneficial. Although pilot projects such as the *Sanchar Shakti* scheme of the Department of Telecommunications have demonstrated how the gender budget component of USOF can provide subsidized, mobile-based value added informational services to women, they have been left to languish without any attempt at scale up.

(b) Gender-blind design of rural broadband

The National Optic Fibre Network/ Bharat Broadband scheme to reach *Gram Panchayats* is seen as integral to the creation and delivery of ICT-enabled services for the economic and social empowerment of citizens. In June 2018, the Department of Telecommunications appended another component to this scheme – the establishment of rural Wi-Fi hot spots in every *Panchayat* area for covering the last mile.[xv]

Apart from implementation lags, the scheme's gender-blind approach has meant a missed opportunity for dovetailing connectivity with innovative local institutional service and information delivery for women and girls. The Internet, as the Telecom Regulatory Authority of India has also pointed out, is an "experience good". Its value for women's empowerment will be evident only when the access experience opens up new possibilities, creating incentives for further use.

(c) No concerted strategy to promote women's participation in Common Service Centers

The government has invested in setting up a country-wide network of public access points at the *Gram Panchayat* level to provide a range of digitally-enabled services to rural communities – Internet browsing, DTP services, facilitated access to e-services of the government, commercial digital services, and digital literacy trainings. These points, known as 'Common Service Centers', have been set up under a public-private partnership model, in which a village level entrepreneur (VLE) is engaged as a franchisee by the government to manage the center and also provide commercial services.

There is no clear strategy to enhance women's participation in the scheme – either in the form of gender-inclusive criteria for selection of VLEs or measures to promote women's uptake of the Internet and other digital services at these centers. Tracking this becomes even more difficult as there are no reliable data about the percentage of women VLEs. Claims put out by different wings of the government vary widely, from a modest 13% to an overwhelming 90%.[xvi]

2.1.2 Enabling environment for meaningful use

An enabling environment, supportive of women's digital capabilities, can bring them the freedom to explore the Internet on their own terms. *Pradhan Mantri Gramin Digital Saksharta Abhiyan (PM DISHA)* is the main strategic component through which *the Digital India program* has sought to invest in digital enskillment of women and marginalized groups. Launched in 2017, this scheme seeks to train 6 crore people by March 31, 2019, and has a budget of 2351 crores. Its eligibility criteria mandate that trainees have to be from households where no one between the ages of 14-60 years is digitally literate. Also, only one member per household is to be trained, preferably a woman.

(a) Failure to implement guidelines for women's digital literacy

Though this scheme has the potential to be a game changer, third party evaluations commissioned by the government raise a number of questions about its effectiveness, revealing large-scale violations of eligibility criteria in beneficiary selection and limited gains for trainees in terms of their skills to seek information online and conduct digital transactions.[xvii] Contrary to the stated intent of

the scheme, the available evidence suggests that older women and women from SC/ST communities have not really benefited from the program. To check fraud in beneficiary selection and improve the quality of training, the government tried to introduce a design modification in the form of stringent beneficiary authentication procedures for enrollment and centralized digital testing to assess skill level of trainees. Unfortunately, media reports suggest that trainers and powerful members of local communities have colluded and found a way to circumvent these checks.[xviii]

As far as the freedom to explore the Internet is concerned, women are constrained by social and household-level surveillance. There has been no attempt within the *Digital India* program to invest in gender-inclusive digital learning hubs at the village level where women can build their skills in navigating online spaces, free from restrictive patriarchal controls. Gender-based violence is another major policy area that continues to pose a challenge **(See Box 1)**.

Box 1. Gender-based cyber violence – lack of a robust legal-institutional response

Online abuse, harassment and gender-based violence is a pervasive problem in India, with dalit women, women who are not cis-gender and women journalists and rights-activists being particularly susceptible to such attacks. There is no dedicated legislation on gender-based cyber violence, and provisions dealing with the issue are scattered across different laws (the two most prominent ones being the Information Technology Act, 2000 and the Indian Penal Code, 1860). The law also does not recognize sexist or misogynistic trolling. Content related laws based on obscenity also create an absurd situation, where women victims themselves could be at risk of legal action in cases of non-consensual circulation of sex videos by their former partners.

The expedient removal of harmful content by Internet intermediaries is another difficult terrain. Until recently, India followed a 'notice-and-takedown' regime whereby intermediaries had to remove content only on the receipt of a judicial order. But this has changed because of a couple of public interest litigations – *Prajwala v. Union of India,* where a Delhi-based NGO called for urgent action against the circulation of rape videos online and *Sabu Mathew George v. Union of India And Ors.*, where an individual petitioner questioned the availability of online search results for pre-natal sex determination services on mainstream search engines. In response to these cases, the Supreme Court issued the following directions:

- Preemptive filtering and blocking of patently illegal content, such as sex determination adverts and rape videos must be undertaken by platform intermediaries. The set of impermissible key words that will inform this process has to be notified by the central government.

- A nodal agency has to be set up by the state, for pro-actively identifying 'rogue web pages/links' that carry illegal content and flagging them to Internet intermediaries for expedient removal.
- A centralised reporting mechanism must be instituted for citizens to flag unlawful content.

But in terms of implementing these directions, there is still a lot of ground to be covered. In fact, the Supreme Court has recently issued a harsh warning to Internet intermediaries for their failure to cooperate in this process.

2.2 Data infrastructure for AI innovation

The Union Budget 2018 explicitly acknowledged the development of a national AI strategy for social good and creation of the underlying data infrastructure as a key priority for *Digital India,* thus adding another outcome area to *Digital India*. The budgetary announcement was followed up in 2018. NITI *Aayog* also put out a discussion paper on the AI strategy to support five crucial sectors: health care, agriculture, education, smart cities and infrastructure, and smart mobility and transportation. NITI *Aayog* has called for investment in public data infrastructure at the national level to support innovative AI solutions in these different sectors – customized input advisories for agriculture, AI-assisted clinical diagnostic tools, AI solutions for identification of students at the risk of dropping out from public schools, integrated SMART systems for public services provisioning in cities, etc. In the creation of the data ecosystem itself, the government is expected to play a lead role through measures such as: annotating and harmonizing inter-departmental data sets held by different wings of the government, mandating corporate data sharing for social good, and laying down the rules for access to data sets and the creation of AI solutions in order to prevent violations of citizen rights.[xix]

(a) Lack of attention to gender considerations in the national strategy for data and AI

NITI *Aayog's* discussion paper does not pay attention to the questions of women's empowerment and gender equality. The lack of gender-disaggregated, machine-readable, data sets in different domains is a major stumbling block to the development of public AI infrastructure.

Also, the effective balancing of public interest considerations of AI for social good with those of protection of citizen privacy is extremely important for women and gender minorities given their vulnerability to risks stemming from the leakage of sensitive personal information. While NITI *Aayog* has raised this as a critical concern in the discussion paper, its actions with respect to rolling out data infrastructure for AI innovation in different sectors have not always toed this line (See Box 2).

Box 2. National Health Stack: Key challenges for right to privacy and personal data protection

In July 2018, NITI *Aayog* announced a proposal for a National Health Stack – a cloud-based platform that brings together individual health records and service provider records, making them accessible through Open Application Programming Interfaces (APIs) to those seeking to build data-based solutions in the health sector. The idea is to cluster all health records pertaining to an individual using a single digital identifier, preferably the *Aadhaar* number.

Civil society activists have pointed to how an API-based digital health records system is extremely vulnerable to being breached. They have also highlighted that the lack of clarity on who will manage the National Health Stack and the resultant accountability loopholes in public-private partnerships for data sharing will further compromise the rights of citizens who are already at the margins. For women, whose sexual and reproductive choices have historically been subject to control by the society and state, data technologies in health not backed by adequate safeguards can be additionally threatening. In the light of the fact that the draft of the recently released Data Protection Bill has given state agencies sweeping powers to access and process citizen data for public interest, these concerns need to be underscored strongly.

2.3 On-demand e-service delivery

For the architects of *Digital India*, the transformation to on-demand e-service delivery is part of a larger project of governance reform, which is to transition to a welfare delivery system that is reliable, efficient and transparent. The main strategies adopted towards this are:
- business process re-engineering and work flow automation to usher in a new model of e-service and m-service delivery under the *e-Kranti* initiative,[xx] and
- the systemic adoption of the digitalized unique citizen identification system provided by the *Aadhaar* project to curtail beneficiary fraud and welfare leakages.

Both these strategies have not succeeded in building a gender-responsive welfare delivery apparatus, as demonstrated below.

(a) Lack of a coherent architecture for women-directed e-services

Under the *e-Kranti* initiative, central and state government departments put up proposals for transitioning to digitalized service delivery to a Program Management Committee, for appraisal. Selected proposals are taken up as ‘mission mode’ projects to be completed in a specified time-frame. A major limitation is that the evaluation process is based only on technical criteria, and there

is no assessment of social impacts. Unsurprisingly, in this technicalized exercise of e-service design, no process for integrating gender perspectives in e-service design has been instituted. On a related note, the Draft National Policy for Women 2016 also lacks a strategic vision on leveraging e-government as a public policy instrument for gender equality.

What has emerged is a fragmented approach based on one-off *"islands of excellence"*. There are a few initiatives that hold the promise of transformative change; women-directed health information outreach service of the Ministry of Health and Family Welfare (See Box 3), the nutrition resource platform for *anganwadi* workers, the *Sreesakthi* portal of the *Kudumbashree* Mission in Kerala supporting women's collectives, and tools for gender-based tracking of public services such as the Digital Gender Atlas for Girls' Education.

Box 3. *Kilkari* m-health information service – A successful women-directed digital service

Kilkari is a weekly, IVR-enabled maternal and child health information service that provides informational tips about pregnancy, child birth and child care, from the second trimester of pregnancy upto the time that the child is 2 years old. The messages are directed not just at women, but also at their husbands, as the service recognizes the importance of male involvement for effective outreach. This service was designed by BBC Media Action and successfully piloted in the state of Bihar, where 2 million subscribers were covered within 12 months of its launch. Subsequently, the central government took up the roll out of the service free-of-call charges in 13 states. Currently, *Kilkari* has been acknowledged as one of the most successful m-health interventions in the world.

This success can be traced to two reasons. Universal enrollment was ensured by mandatory coverage of every woman upon her registration in the government's pregnancy register. Second, the service has been positioned as a complement rather than a substitute to frontline health extension systems. In fact, in seven of the states where *Kilkari* is operational, BBC Media Action has also been running an associated intervention – Mobile Academy – that uses a IVR-based pedagogy to build the capacities of ASHA workers in the areas of reproductive, maternal, newborn and child health so that they can perform their role more effectively.

(b) Rights violations in *Aadhaar*-enabled welfare delivery

Aadhaar is the digitalized citizen identification system set up by the Government of India that links an individual's demographic and biometric data to an algorithmically generated, unique 12-digit number.[xxi] *Aadhaar*-enabled welfare delivery was introduced with the promise of creating an

incorruptible citizen-government interface by successfully challenging corruption in welfare delivery in the following ways: weeding out errors and duplication in beneficiary databases of different schemes through *Aadhaar*-seeding, fool-proof beneficiary authentication in the physical uptake of services and benefits by generating on-the-spot reading of individual biometrics and comparing it against the records in the *Aadhaar* data base, and replacing in-kind delivery of subsidies with direct benefit transfers to *Aadhaar*-linked bank accounts to completely eliminate middlemen/brokers. Contrary to ambitions, the transition to *Aadhaar*-enabled service delivery has resulted in a number of rights violations for citizens, with devastating consequences for women from vulnerable socio-economic locations, as discussed below:

(i) *Aadhaar* seeding poses a grave threat to women's right to privacy, dignity and social security. In the absence of necessary restrictions on convergence of multiple beneficiary databases, *Aadhaar* seeding with welfare records has privileged legibility of the citizen to the system, undermining citizen right to privacy. Beneficiaries of the *Swadhar Grah* scheme for rehabilitation of destitute women and those rescued from trafficking or of the self-employment scheme for shifting individuals away from manual scavenging to other occupations are at risk of being permanently stamped with oppressive, stigmatized identities in all their encounters with the government. Rather than risk such exposure, women may choose to avoid coming forward to claim their benefits.

(ii) Errors in *Aadhaar* seeding of beneficiary databases and failure of biometric authentication at the last mile has led to unfair exclusions of marginalized women. From old age pensions to wages under the Mahatma Gandhi National Rural Employment Guarantee Scheme, maternal health entitlements and food rations, women have lost their entitlement claims on account of technological failure in governance. In July 2018, three girls from the same family in the national capital territory of Delhi died of starvation because their family was denied food grains under the public distribution system for failing to link their ration card to *Aadhaar*.[xxii]

(iii) Design of *Aadhaar*-enabled payments system ignores women's lack of autonomy over technological and economic resources. In over 316 schemes of 51 ministries, direct benefit transfers that are *Aadhaar*-enabled have been introduced. In this system, zero balance bank accounts are opened for beneficiaries to bring them into the formal banking net. Each bank account is seeded with the *Aadhaar* number of the concerned beneficiary and linked to his/her mobile phone – the idea being that welfare payments/subsidies can be directly transferred to these accounts along with an immediately generated SMS notification of the transfer. Unfortunately, in a context where the majority of women have only shared access to mobile phones, such a digital payments system poses the risk of strengthening the stranglehold of male mediation and control

over women's finances. The lack of sophisticated digital capabilities and low levels of digital and financial literacy poses yet another challenge to women who navigate this new system, rendering them vulnerable to new forms of cyber frauds.

2.4 Digital empowerment of citizens

2.4.1 Economic empowerment

Unlocking the new opportunities in the digital economy for promotion of employment and enterprise is at the heart of the *Digital India* vision of economic empowerment. The popular discourse around the program has constantly emphasized the *"need to take women along"* in the digitally-enabled pathways of economic growth. This assertion needs to be unpacked against actual trends.

(a) Poor vision for women's economic empowerment in a digitally restructured job market

In policy circles, we see an over-optimism about the potential of digitalization to create new employment opportunities. For instance, the Minister of Electronics and Information Technology has recently shared forecasts about the digital economy opening up 50-70 lakh jobs for Indian youth, by 2020. Keeping in line with this, the mass enskillment of youth to make them ready for the digitally restructured job market has been a main strategy for the *Digital India* program. Between 2015-17, 26.5 lakh individuals were provided skills training in 25 core manufacturing sectors affected by the digital transition, under the *Pradhan Mantri Kaushal Vikas Yojana*.[xxiii] Of the trainees, 50% were women; a move aimed at stepping up the rate of female workforce participation. However, this scheme has not been able to do much in terms of improving women's employment prospects in the current scenario.

To begin with, the government's own evaluations of the scheme reveal that the overemphasis on training targets has compromised quality of training, assessment and certification, leaving the majority of trainees without placements.[xxiv] Further, the scheme's emphasis is limited to low-end skilling that often results in people landing in dead-end jobs without any possibilities for long-term career growth. There is also no gender-disaggregated tracking, and hence no data to facilitate comparative analysis of the prospects of female and male trainees.

And finally, optimistic forecasts about jobs in the digital economy fail to account for the possibilities that technology-enabled restructuring of the job market will affect women workers most. Even though some advanced tech jobs in a few sectors may open up for women, it is expected that automation will lead to large-scale displacement of workers in routine jobs that women dominate.[xxv]

(b) Macro-structures skewed against women's enterprises in the new economy

Promoting access to the digital marketplace for women-run enterprises is a recurring theme in the *Digital India* discourse. Some measures that the government has taken in this direction include the establishment of *Mahila e-Haat,* an online digital platform that allows women entrepreneurs to digitally market their products by listing them *sans* any fees/commission, and promoting their access to bank credit through the *Stand up India* and MUDRA schemes. In a scenario where very few women entrepreneurs have digital capabilities, *Mahila e-Haat* has had very limited impact. What is missing is the wider institutional ecosystem necessary to support and promote women entrepreneurs' digital presence and participation, and strengthen their market linkages. Another major drawback of this portal is that it merely enables individual entrepreneurs to list products and does not facilitate online sales. Credit schemes, too, have not taken off. The *Stand Up India* scheme mandates every bank branch to give two loans – one to a woman and another to an individual from the SC/ST community. As of 2017, less than 25% of the 1.3 lakh bank branches in the country have provided loans to women, and a mere 6% have provided loans to SC/ST individuals.[xxvi] Similarly, the MUDRA scheme may have opened up access to bank loans for 4 crore borrowers operating small businesses (70% of whom are women). But its refinance and credit guarantee measures have failed to expand the micro/small loan portfolio of the banking sector.[xxvii] In addition to implementation delays in schemes that seek to build women entrepreneurs' capacities, policymakers are also faced with the complex challenge of how to effectively safeguard their interests in a globalized digital marketplace (See Box 4).

Box 4. Emerging directions of digital trade and women's economic rights

In global and regional trade negotiations, developed countries are constantly trying to push forward a digital trade agenda that is conducive to the business interests of their transnational e-commerce companies. These include provisions for unrestricted market access, liberalization of import duties, removal of restrictions on FDI, and waiver of local sourcing requirements in developing countries. In WTO negotiations of 2017, India along with the African bloc successfully thwarted this move. In the current scenario characterized by a weak multilateral trade system and emergence of plurilateral trade agreements, outcomes for equity depend on the positions developing countries adopt.

Women-run micro-enterprises require policy support for being able to survive in the face of transnational e-commerce platforms. For example, platforms might flood markets with imported goods, rendering domestic micro-enterprises uncompetitive. Or, in the case of the agriculture sector, if freed from local sourcing requirements, transnational e-commerce companies may build global agri-supply chains which have room only for corporate farming arrangements, skewing prices in local markets in ways that completely render small-scale farming, dominated by women, unviable.

2.4.2 Political empowerment

The center piece of *Digital India*'s strategy for political empowerment is 'MyGov.in', a web platform *"that seeks to bring governance closer to the common man"* by *"creating an interface for healthy exchange of ideas and views involving the common citizen and experts with the ultimate goal to contribute to the social and economic transformation of India".*[xxviii] Launched in July 2014, this portal hosts open discussions and opinion polls on policy proposals, competitions to promote civic-mindedness, and announcements about specific volunteering activities. Currently, it has over 1.78 million users and there are over 10,000 discussion posts per week. To participate on the portal, citizens have to register with their full name, date of birth, gender, email id and mobile phone number.

(a) No guarantee for women's 'right to be heard'

MyGov is not integrated with any larger process of institutionalized citizen consultations. There are no associated offline processes to reach out to individuals who are not online. Even for those engaging on the digital platform, there is no promise of resolution for the issues they raise; no report is prepared and shared by the department/agency leading the discussion. Understandably, this has resulted in a very thin and skewed base of participation. Despite this limitation, the government has announced its intentions to identify policy priorities in 19 key areas through 'sentiment analysis' of discussions on the platform. This poses a huge threat in terms of reinforcing exclusions in policy and programming, by completely ignoring the needs and priorities of marginalized women who are off the connectivity grid.

Another concern is that in the current scenario where a personal data protection law is not yet in force, as part of this 'sentiment analysis', the government may be using tracking tools that profile user behavior in real time to separate citizens into those professing 'positive' and 'negative' views. Such pervasive surveillance has grave repercussions for freedom of expression, with disproportionate impacts on women who vocally challenge patriarchal ideologies of the state in the online public sphere.[xxix]

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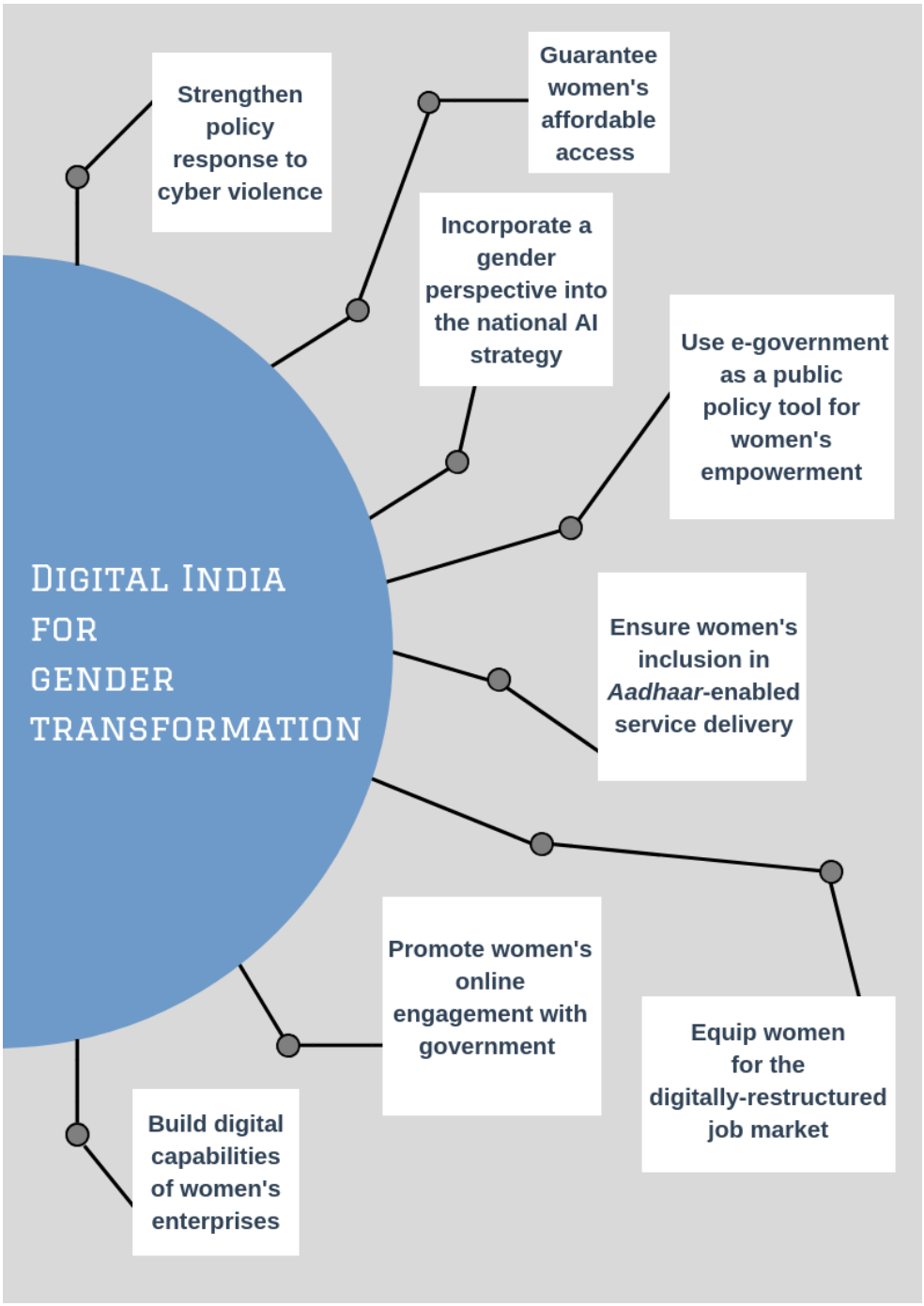
3. Recalibrating the Digital India program for gender-transformative outcomes

This section identifies some key directions for future action in order to ensure that *Digital India* succeeds in effecting sustained gender-transformative change, in the emerging social paradigm.



3.1 Guaranteeing women's affordable access

Quality Internet connectivity (matching global standards for broadband) and a universal data allowance must be guaranteed to all citizens, in line with the spirit of the National Telecom Policy 2012, which speaks of a right to broadband. The Universal Service Obligation Fund can be deployed towards a data allowance quota, in particular, for girls and women from marginalized social and economic contexts. The establishment of special public access points for girls and women continues to be of relevance, especially in under-served areas, for digital literacy skills, vocational and distance education, and access to public information and e-services. Towards this, the Common Service Center scheme can be revamped, by including a strategic component that supports local civil society organizations in catalyzing women's digital participation.

3.2 Evolving effective legal-institutional frameworks to counter gender-based violence

A safe and secure online environment is non-negotiable for women's participation in the digital paradigm. India needs a comprehensive law that can address the different threats and violations that women and people of non-normative gender identities face in cyber space. The piecemeal approach in the present system fails to account adequately for the ground realities of technology-mediated gender-based violence. To enhance institutional responsiveness and develop appropriate measures for intermediary accountability, directions of the Supreme Court of India (discussed in Box 1) need to be complied with.

3.3 Incorporating a gender perspective into the national strategy for data infrastructure and AI innovation

NITI *Aayog* must clearly identify the specific areas in which AI solutions can assist gender-responsive planning. In priority social development sectors (education, health, agriculture, smart mobility and transportation etc.), local innovators attempting to build public AI solutions to address women's equality and empowerment must receive subsidy/support. Principles of algorithmic and AI design need to be developed urgently through a multi-stakeholder process, involving civil society organizations and gender equality experts. With imminent legal frameworks and institutional mechanisms for data protection, the audit of data processes will acquire significance across agencies. Gender equality advocates must be enlisted in the task of auditing AI to ensure that social outcomes of technology are free from bias and discrimination. From scrutiny of training data sets for bias, statistical weights assigned to different variables in the development of algorithms, periodic audits to tweak the AI through iterations and improvements, the task for a gender-responsive data and AI strategy is well cut out.

For enabling civic engagement with public data, gender-disaggregated open data sets need to be made available in critical sectors. This is the first step to any socially responsible and progressive public data infrastructure. The draft personal data protection bill must be modified to institute stronger privacy safeguards with respect to processing of personal data for public interest, with a robust right to explanation provision that enables citizens to question inequitable outcomes of AI-based decision-making.

3.4 Making e-service delivery gender-inclusive

e-Kranti must include a strategic gender component for the design of women-directed one-stop-shop portals and mobile information outreach services for financial/digital literacy, crisis support and welfare schemes. Scope for decentralized project planning will make this component dynamic and context-responsive. A cross sectoral mechanism for developing guidelines and monitoring gender-based outcomes of e-government strategies needs to be set up, with participation from the Ministry of Women and Child and sectoral ministries such as agriculture, rural development, health, education etc.

3.5 Instituting a rights-based framework for women's access to *Aadhaar*-enabled entitlements

Service level guarantees and grievance redress mechanisms corresponding to *Aadhaar*-enabled service delivery must be revisited, with a view to fix their shortcomings. The provision in the *Aadhaar* Act, which states that no scheme or service can be denied to any eligible beneficiary for the want of *Aadhaa*r or errors in *Aadhaar*-enabled authentication mechanisms, must be implemented in full. The onus must be placed on the concerned department/agency to provide an alternative means of identification to beneficiaries who do not have *Aadhaar*.[xxx] In addition, an effective grievance redress mechanism to challenge *Aadhaar*-related denial of benefits must be set up without delay.

3.6 Promoting women's economic participation in the digitally-restructured job market

Women need higher order digital skills not only to take advantage of the emerging employment opportunities in the digital economy, but to renegotiate their socio-economic status. Education policies need to focus on girls' digital skills development in the early years, while digital literacy programs such as PM DISHA need to be integrated into all kinds of vocational and open educational programs. Commitment to gender equality calls for explicit policies to promote girls'/women's participation in advanced technology jobs. Given the risk of automation-induced displacement in sectors where women predominate, dedicated schemes for re-skilling and a strong social safety net are vital in the design of macroeconomic policy.

3.7 Equipping women's enterprises to effectively compete in the digital economy

The state must set up a dedicated program on building the capabilities of women entrepreneurs to participate in the e-commerce marketplace. Directions for the capacity-building of Medium, Small and Micro Enterprises (MSMEs) are laid out in the draft national e-commerce policy (See Box 5). Additionally, in the coming years, global policy discussions need to be negotiated tactfully to ensure that the future digital society is just, and the digital economy truly fair.

Box 5. The draft e-commerce policy and women-run MSMEs

The draft national e-commerce policy has dedicated provisions on promoting the participation of micro, small and medium enterprises: technical enskillment, access to finance, facilitation of on-boarding arrangements with established online platforms and aggregators, and a proposal to develop an e-commerce retail platform in public-private partnership mode that is exclusively targeted at MSME vendors and suppliers. If put into action with a dedicated gender component, these measures will undoubtedly facilitate the economic participation of women-run enterprises on terms that are empowering.

In addition to capacity-building of MSMEs, the draft policy also has a strong focus on curtailing monopolistic tendencies in the e-commerce marketplace. It permits foreign ownership of e-commerce platforms only when they adopt a marketplace model, that is, acting in pure intermediary terms between buyers and sellers, without any ownership over products being sold. Inventory model e-commerce – where e-commerce platform owners also have a stake in the products being sold – are permitted to be set up only by Indian companies. Additionally, in every instance of inventory model e-commerce, a 100% *Make in India* requirement for product sourcing has been proposed, to prevent import flooding that renders local enterprises uncompetitive. The policy also recommends that mergers and acquisitions in the e-commerce sector and foreign direct investment proposals be approved only after careful scrutiny for threats of market distortion.

3.8 Unlocking the digital opportunity for women's political participation

The MyGov portal needs to be built on techno-design elements and protocols that can foster meaningful citizen engagement and public scrutiny. Its identity verification mechanisms need to guarantee citizen right to privacy. MyGov should also incorporate a strategy for proactive disclosure of public information meant for women, using various channels – web, SMS, and voice-based IVR. Most importantly, in a context marked by a wide gender digital divide, no policy decision can be arrived at on the basis of an online consultation alone. It is important, hence, to ensure that MyGov is integrated into a larger process of public consultation that includes offline,

face-to-face dialogues. This complementarity is crucial to reach out to the large majority of women who are off the connectivity grid. Finally, when undertaking any process of sentiment analysis on the discussion threads on MyGov and other social media platforms, the government must ensure that “explainability” is not compromised.

i Press Information Bureau Government of India Cabinet (2014). *Digital India – A program to transform India into digital empowered society and knowledge economy.* Retrieved from http://pib.nic.in/newsite/PrintRelease.aspx relid=108926

ii *ibid*

iii Jaitley, A. (2018, February 1). *Budget 2018-2019.* Retrieved from https://www.incometaxindia.gov.in/Budgets%20and%20Bills/2018/Budget-Speed-2018.pdf

iv Prasad, R. S. (2017, November 18). *34,000 Women entrepreneurs of CSC are not only creating a digital revolution but also leading to women empowerment*. Retrieved from https://www.facebook.com/RaviShankarPrasadOfficial/posts/10155793104758329

v This paper draws upon a detailed policy study titled 'Digital India through a Gender Lens', undertaken by the authors in 2017-18, with support from the Heinrich Boell Foundation. The study can be accessed at https://in.boell.org/2018/08/01/digital-india-through-gender-lens

vi Bhattacharya, A. (2017, December 13). India's internet has a massive gender problem—and it's holding girls back. *Quartz.* Retrieved from https://qz.com/india/1153841/indias-internet-has-a-massive-gender-problem-and-its-holding-girls-back/

vii Press Trust of India (2018, February 21). Internet users in India likely to cross 500 mn by June 2018: IAMAI. *ET Telecom.* Retrieved from https://telecom.economictimes.indiatimes.com/news/internet-users-in-india-likely-to-cross-500-mn-by-june-2018-iamai/63008354

viii BGR (2018, February 21). Only 30% internet users in India are women: IAMAI report. *BGR.* Retrieved from http://www.bgr.in/news/only-30-percent-internet-users-in-india-are-women-iamai-report/

ix Daniyal, S. (2017, June 2) Falling data costs, massive mobile usage makes India a fascinating market for internet, says report. *Scroll.* Retrieved from https://scroll.in/article/839362/falling-data-costs-massive-mobile-usage-makes-india-a-fascinating-market-for-internet-says-report

x Consider this – in the first 3 months after the launch of Reliance Jio in September 2016, urban teledensity increased by 18% (from 152% to 170%) while rural teledensity increased only by 2% (from 51% to 53%). Recent data from 2018 suggests that this trend has continued. K, Baburajan. (2018, May 27). Reliance Jio 4G struggles in rural markets of India. *Telecomlead.* Retrieved from https://www.telecomlead.com/4g-lte/reliance-jio-4g-struggles-in-rural-markets-of-india-84343

xi Bhattacharya, A. (2018, June 21). India's internet penetration is actually way lower than you'd think. *Quartz*. Retrieved from https://qz.com/india/1310947/india-ranks-last-in-pews-survey-of-internet-penetration/

xii *ibid*

xiii Aneja, U. & Mishra, V. (2017, May 25) Digital India Is No Country for Women. Here's Why. *The Wire*. Retrieved from https://thewire.in/economy/digital-india-women-technology

xiv IANS (2017, November 16). Parliamentary panel concerned over infrastructure for digital economy. *Suryaa*. Retrieved from http://www.suryaa.com/26198-

xv ETTelecom (2018, February 1). Budget 2018: Government aiming to set up 5 lakh hotspots, allocates Rs 10000 cr. *ET Telecom*. Retrieved from https://telecom.economictimes.indiatimes.com/news/budget-2018-government-aiming-to-set-up-5-lakh-hotspots-allocates-rs-10000-cr/62738178

xvi Ministry of Electronics & IT (2017). Hon'ble Prime Minister Shri Narendra Modi to address Digital Saksharata Abhinandan Samaroh. Retrieved from http://pib.nic.in/newsite/PrintRelease.aspx?relid=171435 and Prasad, R.S. (2017, November 18). 34,000 Women entrepreneurs of CSC are not only

creating a digital revolution but also leading to women empowerment. Retrieved from https://www.facebook.com/RaviShankarPrasadOfficial/posts/10155793104758329

xvii Jain, S. (2017, July 31). The Truth Behind the Growing Number of India's 'Digitally Literate'. *The Wire*. Retrieved from https://thewire.in/158447/pradhan-mantri-gramin-digital-saksharta-abhiyan-truth-behing-digital-literacy-in-india/

xviii *ibid*

xix NITI *Aayog* (2018, June). *National Strategy for AI Discussion Paper.* Retrieved from http://www.niti.gov.in/writereaddata/files/document_publication/NationalStrategy-for-AI-Discussion-Paper.pdf

xx Principles of e-Kranti(NeGP 2.0). (n.d). Retrieved from http://meity.gov.in/writereaddata/files/Principles%20of%20e-Kranti.pdf

xxi About UIDAI. (n.d). Retrieved from https://uidai.gov.in/about-uidai/about-uidai.html

xxii Tiwari, V. (Ed.). (2018, July 25). 3 Sisters Found Dead In Delhi, Autopsies Suggest They Died Of Hunger. *NDTV.* Retrieved from https://www.ndtv.com/delhi-news/medicine-bottles-missing-father-3-sisters-found-dead-in-delhi-1889704

xxiii Press Information Bureau, Government of India (2017, June 6). *More than 1.17 crore people skilled under Ministry of Skill Development and Entrepreneurship programs.* Retrieved from http://pib.nic.in/newsite/PrintRelease.aspx?relid=164440

xxiv Pradhan, B. & Chaudhary, A. (2017, October 16). Imperfect skills programs no match for India's army of workers. *Livemint*. Retrieved from https://www.livemint.com/Politics/RJlaLkf9rIZN3EjxZJy4qL/Imperfect-skills-programs-no-match-for-Indias-army-of-worke.html

xxv Martinson, J. (2018, January 21). Technology will widen pay gap and hit women hardest – Davos report. *The Guardian.* Retrieved from https://www.theguardian.com/inequality/2018/jan/21/technology-widen-pay-gap-hit-womens-jobs-hardest-davos-report

xxvi The Wire. (2017, October 10). Are Banks Really Giving Out Loans Under the Stand Up India Scheme?. *The Wire*. Retrieved from https://thewire.in/186021/stand-up-india-loans/

xxvii Iyer, A. (2017, March 28). Has Mudra scheme been successful? *Livemint*. Retrieved from http://www.livemint.com/Money/eTlWhV3Mxkrm9gdl7p1VhJ/Has-Mudra-scheme-been-successful.html

xxviiiMyGov: An Overview. (n.d). Retrieved from https://www.mygov.in/overview/

xxix Jensen, J. (2012). *Women and virtual citizenship? Gendered experiences of censorship and surveillance.* Retrieved from http://www.gender-is-citizenship.net/sites/default/files/citigen/uploads/Heike_TP_final.pdf

xxx Gupta, K. (2018, February 10). UIDAI says no essential service can be denied for want of Aadhaar. *Livemint.* Retrieved from https://www.livemint.com/Politics/9VJYLFAWmUsa7OiKIdFs4L/UIDAI-says-no-essential-service-can-be-denied-for-want-of-Aa.html