DIGITAL INDIA THROUGH A GENDER LENS

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1 INTRODUCTION

1.1 Scope of inquiry

This research paper seeks to analyse *Digital India* from a gender perspective, evaluating its implications for women's empowerment and gender equality. *Digital India*, as a commonplace terminology has attained the status of a *boundary object*: a concept that is highly plastic, allowing diverse interpretations, but still recognisable to actors from very different socio-structural locations for a certain common core. In the different discursive universes of public policy, political performance and mainstream public debate, the idea of *Digital India* occurs frequently. For policymakers, it is a flagship programme; for members of the political class, it is emblematic of a resurgent Indian nation that is transforming into a powerhouse in the global digital economy; while for citizens, it may be an aspirational ideal of upward social mobility or a paradigm shift in transacting with the state.

While acknowledging that *Digital India* represents both a bounded programmatic domain as well as a loose idea invoked by different actors, this paper delimits its focus mainly to the three strategic areas of the 'official' *Digital India* programme – connectivity infrastructure, e-service delivery, and social and economic empowerment of citizens, identified in its vision. It sets out to evaluate the extent to which these key 'outcome areas' – *'infrastructure as a utility to every citizen'*, *'governance and services on demand'* and *'digital empowerment of citizens'* – integrate gender-aware and gender-responsive design perspectives and their implications for gender-transformative change.

The paper also examines – to a limited extent – the political rhetoric on women's empowerment in *Digital India*, evaluating how this reflects the reality.

The structure of the paper is as follows. Section 1 introduces the conceptual building blocks of the analytical framework and the methodology deployed. Section 2 provides an overview of the constituent elements of the *Digital India* programme within the three key outcome areas that become important to probe from a gender perspective. Sections 3, 4, and 5 take stock of the gender-based outcomes of *Digital India*, with respect to: guaranteeing women's meaningful access to connectivity, ensuring gender-inclusive e-service delivery design and women's economic and socio-political empowerment. Section 6 highlights the key conclusions. Section 7 charts out a future course of action for policymakers to effectively address gaps/lacunae in the current design and

for policymakers to effectively address gaps/lacunae in the current design and implementation of *Digital India*.

1.2 Conceptual building blocks

The conceptual building blocks deployed by the paper for its gender analysis framework are explained below:

1. Women's empowerment: the *"expansion in (women's) ability to make strategic life choices in a context where this ability was previously denied to them"* (Kabeer 2001, cited in Malhotra, Schuler, and Boender 2002, pp 6). In this view, the constituent elements of choices are: *"resources, which form the conditions under which choices are made; agency, which is at the heart of the process through which choices are made and achievements, which are the outcomes of choices"* (ibid, pp 8). Most importantly, the process of choices has to come without *"punishingly high costs"* (Kabeer 2005)..

Agency, or the power that women have to make and act on their life choices in relation to empowerment, implies *"not only actively exercising choice, but also doing this in ways that challenge power relations"*(ibid). Therefore, *"empowerment is, first and foremost, about power; changing power relations in favour of those who previously exercised little power over their own lives"* (Sen 1997, cited in Cornwall 2014). This power stems from *"control over material assets, intellectual resources, and ideology"* (Batliwala 1994, cited in Cornwall 2014).

2. Gender equality: Gender equality may be conceptualised as the destination to the journey that is women's empowerment. It refers to a state of *"equivalence in life outcomes for women and men, recognising their different needs and interests, and requiring a redistribution of power and resources"* (World Bank 2001a, cited in Malhotra, Schuler, and Boender 2002). When conceptualising gender equality, it is important to recognise that women as a group are not homogeneous. Women's needs and interests and their control over resources and decision-making power are shaped by the multiple identities they have, including, race, class, ethnicity, religion, sexual orientation, age, disability etc.

3. Gender transformative change: This refers to the transformation of gender power relations in complex and non-linear ways, encompassing individual and systemic change, and formal and informal domains of life experience. The 'Domains of Change' framework developed by Rao and Kelleher (2002) offers a comprehensive schema for mapping gender transformative change, as detailed below:
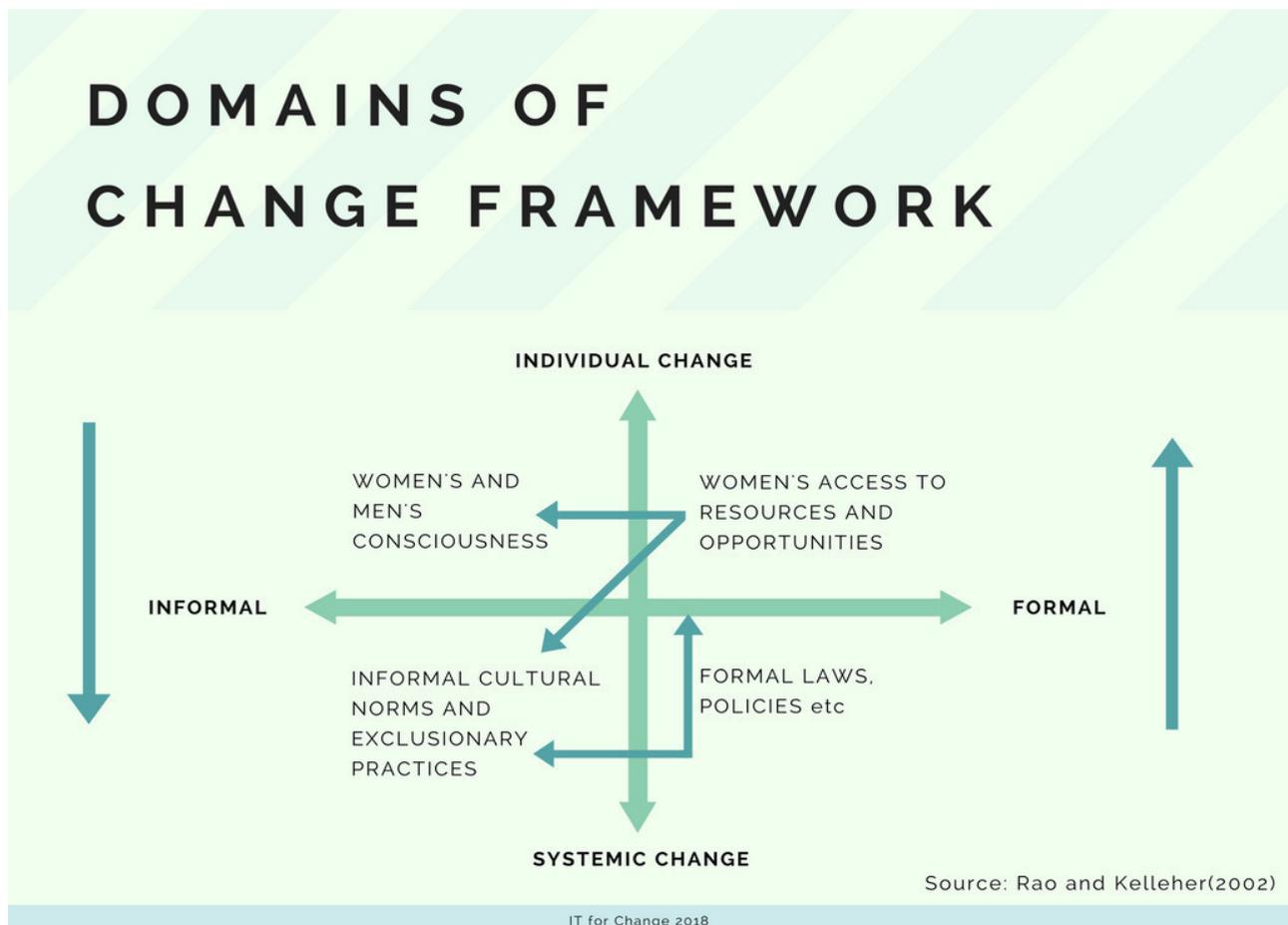
As the diagram above demonstrates, gender transformative change straddles:
(a) women's access to material and symbolic resources;
(b) institutional recognition of gender equality agenda by legal-policy frameworks;
(c) deep change in social norms of gender;
(d) ideological shifts in terms of critical reflection on beliefs and attitudes that women and men hold about gender power relations.

1.3 Methodology

The paper adopts a policy analysis methodology, drawing upon secondary literature as well as primary methods of data collection. An extensive desk review of critical policy and programmatic documents pertaining to *Digital India*, along with a detailed   combing

of research papers, independent evaluations and media reports of the different components of the programme was carried out. Additionally, we deployed the following primary methods of data collection:

(a) content analysis of MyGov portal, data.gov.in portal and Twitter analysis of the handle of the Ministry of Women and Child Development.
(b) key informant interviews with government officials, and civil society practitioners working on women's rights, livelihoods, and gender and governance, and researchers studying gender and digital economy. A list of key informants interviewed for this research is provided at **Annexure 1**.

2 Digital India programme

2.1 Programme Overview: Nine pillars for a digitally empowered society and knowledge economy

Digital India is a flagship programme that seeks to transform India into "a digitally empowered society and knowledge economy" by 2018 (Government of India Cabinet, 2014). It was approved by the Union Cabinet in August 2014 with the objective of providing "intensified impetus" to existing e-governance initiatives and promoting "inclusive growth" by leveraging new manufacturing and job opportunities, especially in electronic manufacturing and IT-enabled services (ibid). The focus of the programme is defined in terms of nine key areas, termed the "programmatic pillars". They are summarised below (Department of Electronics and Information Technology, 2014):

(1) Building national broadband highways: Expanding the National Optic Fibre Network to provide high-speed broadband to all 2,50,000 *Gram Panchayats*, and developing the National Information Infrastructure: an integrated high speed and network infrastructure for ensuring connectivity to government offices from state upto *Gram Panchayat* level.

(2) Universal access to mobile connectivity: Increasing mobile network penetration and coverage of gaps in the connectivity grid.

(3) Public Internet access programme: Setting up Common Service Centres, Internet-enabled kiosks at the village level to provide access to digitalised public and private services for citizens, in all 2,50,000 *Gram Panchayats* of the country, under a franchisee model involving village level entrepreneurs; and converting 1,50,000 post offices across the country to digitalised multi-service centres.

(4) Reforming Government through technology: Transitioning to integrated e-service delivery through business process re-engineering, work flow automation, and the systemic adoption of the digitalised unique citizen identification system provided by *Aadhaar*.

(5) *E-kranti* / electronic delivery of services: Supporting the development of e-services and m-services by various sectoral ministries and agencies.

(6) Information for all: Strengthening online access to information and open data for citizens, and promoting online citizen engagement through the MyGov portal.

(7) Electronics Manufacturing: Ensuring net zero imports of electronics by 2020.

(8) IT for Jobs: Opening up new job opportunities for individuals in villages and small towns, through digital literacy drives and enskillment, and promoting the establishment of BPOs in these areas.

(9) Early Harvest Programmes: Initiating short term projects for digitalisation, mainly pertaining to in-house administration of government departments and establishment of Public Wi-fi.

The nine pillars are seen as jointly contributing to the realisation of three core objectives: the provisioning of digital infrastructure as a core utility, shifting to an e-governance paradigm that guarantees services on-demand, and the digital empowerment of all citizens ("How Digital India will be realised", n.d.).

Since the programme's launch in 2014, the rhetoric of *Digital India* has been associated with a wide gamut of initiatives. The Prime Minister and members of his cabinet, particularly the Union Minister of Electronics and IT, have deployed the term in relation to a range of initiatives, in the media and in public events. Particularly noteworthy among these initiatives are the *Skill India* campaign that aims at training 40 crore youth by 2022, for employability in the current context where manufacturing is being restructured by technology (The RedMark, 2016), and the *Stand*

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1 This target has been achieved as of August 2017, according to a media announcement by the Union Minister of Electronics and IT.
See http://indianexpress.com/article/opinion/columns/e-possibilities-digital-india-e-money-job-bhim-bridge-modi-4798511/

up India, Start up India campaign ([2]Press Trust of India, 2016) that seeks to promote medium, small and micro enterprises (MSMEs), against the backdrop of the emerging digital marketplace.

'Aadhaar-enablement' in relation to e-service delivery is another important theme in official-speak. In his public speeches, the Prime Minister, on more than one occasion, has highlighted how "Aadhaar has enabled people to get the entitlements that they rightfully deserve" (IndiaToday, 2017) and in keeping with Digital India's emphasis, "greatly helped reduce corruption and bring transparency in the country" (ANI, 2017a).

Innovations through Digital India are also sought to be linked to the idea of "Minimum Government, Maximum Governance ("Minimum Government, Maximum Governance", 2014): a catch-all definition of 'good governance' used by the Prime Minister to promote his brand of politics professing a slim and less intrusive government that delivers justice for the people, promotes an entrepreneur-friendly environment, and encourages people's participation, especially women's, in micro-local processes of infrastructure building (ibid).

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2.2 Women's empowerment in Digital India

The programme document that describes the nine pillars does not have any explicit reference to women's empowerment and gender equality. 'Women's empowerment', however, features rather prominently in popular discourse and official narratives on Digital India, including public statements and speeches by the Prime Minister and members of his Cabinet. The Start up India campaign has been seen as critical for promoting women-owned MSMEs in the digital economy. For example, in his 2015 Independence Day address, the Prime Minister announced that the Start up India campaign would ensure that "the country could, in no time, have at least 125000 start-ups by women and Dalits" (Varma and Anuja, 2015). Similarly, the 2,50,000 Common Service Centres – Internet-enabled one-stop-shops that provide access to e-government services and other commercial digital services to rural communities across the country – have been celebrated for opening up opportunities for women to become digital entrepreneurs in their villages. The Union Minister of Electronics and IT, Shri Ravi Shankar Prasad, has heralded these centres as catalysts of "an information technology revolution for social change that is led by women" (Abbas, 2016) and "a digital revolution for women's empowerment" (CSC in News, 2017).

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2 In popular discourse, 'Start up India, Stand up India' and 'Start up India' are used interchangeably.

The success of *Aadhaar*-enabled direct benefit transfers in ensuring the financial inclusion of poor and marginalised women is another recurring theme. The Finance Minister has highlighted that this move is *"nothing short of a social revolution"* as *"it link[s] all Indians into one common financial, economic, and digital space. No Indian will be outside the mainstream."* (Press Trust of India, 2017a).

In addition to these references to the digital opportunity for women's economic empowerment, empowering women through digital literacy has also been given some attention. The *Pradhan Mantri Gramin Digital Saksharata Abhiyan (*PMGDISHA) aims at making *"six crore persons in rural areas, across States/UTs, digitally literate, reaching to around 40% of rural households by covering one member from every eligible household by 31st March 2019"* ("About PMGDISHA", nd). Though the scheme guidelines specify that *"preference would be given to SC, ST, BPL, women, differently-abled persons and minorities"* (Ministry of Electronics and Information Technology 2017b, pp2), they do not provide for gender-disaggregated training targets.

The following sections evaluate the three key outcome areas of *Digital India* from a gender perspective, and focus on: women's access to the gains of connectivity, gender responsiveness of emerging e-service delivery arrangements, and the programme's implications for women's socio-political and economic empowerment.

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3 Outcome Area 1. Women's access to connectivity

3.1 Nature and extent of the gender divide in access

The absence of large scale and robust gender-disaggregated statistics limits our ability to perform an in-depth assessment of women's access to, and use of, the Internet. However, by putting together existing government data and findings from industry-led surveys, it is possible to construct a broad picture. According to the latest figures from the Telecom Regulatory Authority of India, as of June 2017, 33.47% of the Indian population have access to the Internet. There is clearly a rural-urban divide: only 15.56% of the rural population is accessing the Internet, as opposed to 72.51% of the urban population (TRAI, 2017). Unsurprisingly, the overwhelming majority of subscribers access the Internet through mobile broadband. As far as the gender break-up is concerned, the *Internet in India 2016* report has highlighted that the ratio of male to female Internet users is 75:25 in rural areas whilst it is 60:40 in urban areas (Jain, S., 2017a).

Small-scale studies from industry and academic/ policy organisations also shed some light on women's patterns of Internet use. In a 2015 research survey carried out by IT for Change with 770 women in an urban poor neighbourhood in New Delhi, 46% of women surveyed reported to having used the Internet in the past six months (IT for Change, 2016).

The survey found that: *"Internet use is highest among those between 18-34 years, and declines as age increases. Similarly, Internet access shows a positive correlation with level of education; with a higher percentage of those who have completed secondary school using the Internet than those who have completed only primary school, and those with no formal education"* (IT for Change, 2016, pp5).

The survey also revealed that for urban poor women, access to the Internet was not automatically expanding their strategic life choices. Facebook was the most commonly used platform, with 98% of female Internet users accessing it. 49% of female users reported to having followed links outside Facebook, which reveals some exposure to the wider Internet.

But this was not translating into meaningful online information seeking. Only 17% of female Internet users reported to seeking information online on critical information such as rights, or on health, public services or development projects. Similarly, only 4% of female Facebook users reported that networking online had helped them find a job or increase their incomes. And finally, only 1% of female Facebook users reported to forging new networks of support online. What this means is that without cultural and social capital, urban poor women cannot leverage the Internet opportunity for expanding their offline social networks in a way that enhances their opportunities.

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A 2016 research report by Google and AT Kearney indicates that there are 3 Indian men for every Indian woman on Facebook, a finding that may need more unpacking along age, education and other variables. A 2015 Observer Research Foundation study found that women are significantly underrepresented in political conversations on Twitter (Google and AT Kearney 2016, Anderson 2015, as cited in Jain, 2016).

Women's independent and active use of social media is viewed as a threat to prevailing gender social norms, especially those pertaining to sexuality, resulting in household and social controls on women's use of mobile phones (Kovacs, 2017, cited in Halim, 2017).

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Research studies have long recognised that gendered surveillance often prevents women and girls from visiting Internet cafes (Moolman & Kee, 2011; Intel & Dalberg, 2012). Women often feel less comfortable frequenting such public access spaces, as they tend to be highly masculinised (ibid). As has also been discussed in **Box 1** below, sexual harassment online becomes a major inhibitor to women's gains from the Internet, especially in the absence of a robust legal-policy response. Women who voice their opinion tend to be targetted by such harassment and often feel forced to exit.

According to one estimate, by 2020, the number of Internet users in India will increase exponentially to 850 million, of whom about 50% will be rural users and 40% will be women ((Boston Consulting Group, cited in Mendonca, 2017). But current trends belie this optimism. Certainly, the disruption of the data services market by Reliance Jio's free

data offer has contributed to wireless broadband affordability, by forcing other companies in the telecom market to slash prices. Post-Jio, *"annual average data rates for the country stand at 1.3% of annual GDP/capita – well below the recommended 2% of annual GDP/capita threshold for affordability prescribed by the Alliance for Affordable Internet"* (Daniyal, 2017).

However, going by evidence from the ground, the rural population does not seem to have benefited from this trend. 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%) (Gairola, 2017). More recent data from July 2017 indicate that only 5.7% of Reliance Jio subscribers are from rural areas (TRAI, cited in Rathee, 2017).

Ownership of connectivity gadgets (whether the computer or the mobile phone) at the household level may be seen as an important factor for women's effective access to connectivity. As per the ITU India Profile 2016, only 15.2% households in the country had access to the Internet (ITU, 2016). The National Family Health Survey 2016 reveals that whilst 67% of urban women have access to mobile phones, only 37% of rural women do (NFHS 2016, as cited in Bhattacharya, 2017). The survey does not provide data on how many women have smart phones, but is a good proxy for the extent of control that women have over digital gadgets, at the household level.

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Research indicates that a large proportion of women face significant affordability barriers with respect to smart phone ownership: *"Over 134 million people in India are unable to afford one of the cheapest Internet-enabled handsets on the market, because it exceeds an affordability threshold at 5% of income. Although smartphone prices are projected to decrease in emerging markets, prices will not drop low enough to accelerate ownership among the underserved, including low-income groups, women, and rural population"* (GSMA, 2017).

What the data points to is a considerably lower uptake of the Internet among women in general and rural women in particular, against a backdrop of Internet diffusion challenges for the country, especially in rural areas. Better and nuanced data sets on household level broadband and smart phone ownership are needed to map women's patterns of use across socio-structural locations. What is clear from primarily urban data is that age, income and educational attainment do play a role in access patterns. The perceived threat to social order coming from women's use of the Internet / social media is a significant social barrier to their online participation. While women who do go online are not socially as active or politically as articulate as men, those who do express their opinion are vulnerable to harassment and may hence opt out.

INVESTIGATING WOMEN'S ACCESS TO INTERNET IN INDIA

15.2%
households have access to Internet

ITU 2016

15.6%
rural households have access

72.5%
urban households have access

TRAI 2017
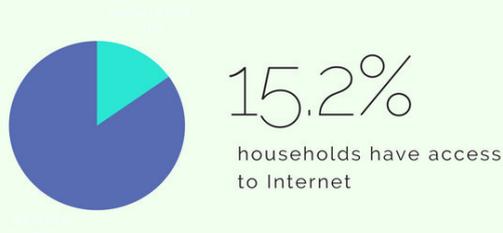
Ratio of men to women with Internet access

72

25

Rural

60

40

Urban

Internet in India 2016

Mobile Access

37%

67%

Rural women

Urban women

NFHS 2016

Education

Tertiary

Secondary

Primary

Women's Access
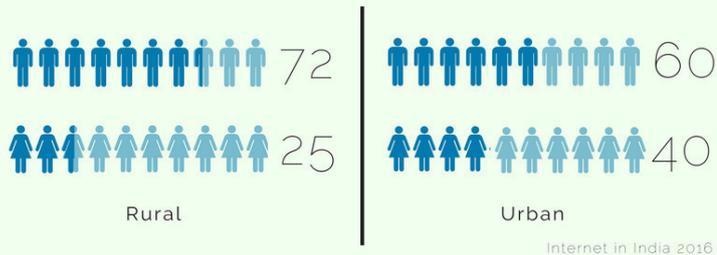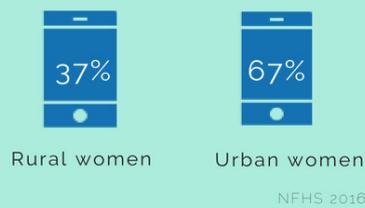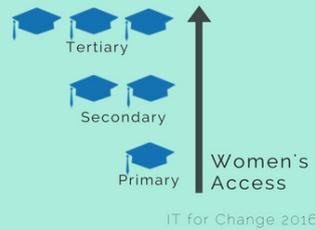
IT for Change 2016

What is being accessed?

As per a 2015 research survey carried out by IT for Change with 770 women in an urban poor neighbourhood in New Delhi

98% women reported Facebook as the most commonly used platform
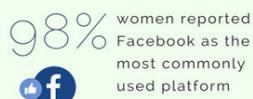
49% followed links outside Facebook

17% women reported seeking information online about rights, health, public services, development projects

4% women reported that networking online had helped them find a job or increase their incomes

1% women reported they had found new support networks online

IT for Change 2018

Box 1. Gender-based violence online: The policy challenge

The pervasiveness of online gender-based violence in social media and other interactive web platforms exacerbates women's exclusion from the public-political sphere. A survey of 500 social media users, carried out in 2016 by FeminisminIndia.org, revealed that women are disproportionately at the receiving end of online abuse, harassment and gender-based violence (Pasricha, 2016). Threats of rape and murder are routinely doled out to women who dare to voice their opinion in public (Kovacs, Padte and Shobha, 2013). Dalit women, women who are not cis-gender and women journalists and rights-activists are particularly susceptible to such attacks, especially well-coordinated strikes by a multitude of abusers working together – what is referred to as a "troll army" (Jena 2017; Dutt 2017). This creates an environment of hostility leading to a chilling effect on women's free-expression, and invading their privacy, undermining their dignity and eroding their agency and autonomy (IT for Change, 2017). Currently, India lacks a robust legal framework to address online gender based violence, that effectively balances women's right to freedom from violence with free speech considerations. Provisions to deal with such violence are scattered across laws, but the two main legislations employed are the Information Technology Act, 2000 (ITA) and the Indian Penal Code, 1860 (IPC).

Firstly, the ITA does not have any provision to tackle sexist/misogynistic content; it only deals with the publication and circulation of sexually explicit content. Previously, the ITA contained a provision that penalised communication that was "grossly offensive": Section 66A. It was struck down by the Supreme Court of India, in the landmark case of *Shreya Singhal vs Union of India*, for its unconstitutional, excessive, and arbitrary restrictions on free speech. In the same case, it also ordered that considering the barrage of complaints about offensive content that Internet intermediaries receive, an executive or judicial order should precede any content take down. Though Section 66 A was undoubtedly a draconian provision that led to the suppression of minority opinion and political backlash against dissenters, its repeal has created a vacuum – as women victims of sexist abuse and vitriol that may not be sexually explicit do not have any legal recourse. Also, in the current context where courts and law enforcement agencies are overburdened, victims of online gender based violence may be denied speedy and effective redress if an executive/ judicial order is a precondition for any content takedown. The Supreme Court has now recognised this, and in *Prajwala vs Union of India*, it is examining whether preemptive content filtering and blocking can be introduced to curtail manifestly unlawful content such as rape videos.

Secondly, within the ITA, with respect to addressing the non-consensual publication and circulation of sexually explicit content, provisions that use a privacy-based approach co-exist with others that draw upon an obscenity framework. Since the obscenity provisions carry a higher quantum of punishment, law enforcement officials register cases under these provisions rather than privacy provisions. In cases of what is termed 'revenge porn' (the non-consensual online publishing of sex videos by a former partner), this leads to the absurd risk of victims themselves, especially those of alternative sexual orientation and gender identities, being prosecuted for obscene conduct (Verma, 2017).

As far as the IPC is concerned, it is a pre-digital legislation with a strong paternalistic and protectionist bias. Further, apart from a provision on cyberstalking that was introduced through a recent amendment, the IPC does not have any other provisions that explicitly deal with technology-mediated violence.

The national women's machinery has been concerned about addressing this gap. In 2014, the National Commission for Women organised a consultation on 'Ways and Means to safeguard women from Cyber Crimes in India'. One of the recommendations from the consultation was that '*...a woman centric information technology law must be drafted defining types of cyber crimes targeting women*' (NCW, 2014). The Ministry of Women and Child Development has also been actively flagging this issue, especially since the Ministry's own online efforts have been targeted by trolls. In June 2016, the Ministry had put out the draft national policy on women for wider discussion, and a number of responses to this document on the website reflect disparaging comments against women. In November 2016, when the Minister of Women and Child Development wrote a letter to the Home Ministry urging the enactment of a code of online behaviour that would classify trolling of women as violence, she was trolled. This year, the *Mahila e-haat* portal that promotes products manufactured by women was hacked and had to be shut down for a couple of months.

The Ministry of Women and Child Development also lobbied for restituting an amended version of Section 66A, to tackle cyber-security of women and children before the T.K. Vishwanathan Committee that is examining how to address hate speech online. It has recommended the establishment of a green channel for raising cyber crime cases on a real-time basis, where the abusive content can be taken down immediately. Any such green channel will first have to deal with the unresponsiveness of Internet intermediaries to complaints of online violence. In many instances, platform intermediaries have refused to take

down abusive and misogynstic content as it does not violate their terms of use, which err on the side of free speech. They have also refused to cooperate with law enforcement investigations to gather evidence, and their compliance has been difficult to secure even in cases where India has Mutual Legal Assistance Treaties (MLATs) with the countries where they are headquartered.

Source: Abridged from IT for Change's submission to the UN Special Rapporteur on violence against women in 2017. See https://www.itforchange.net/index.php/submission-on-online-violence-against-women-to-special-rapporteur-on-violence-against-women.

3.2 Connectivity infrastructure policy and programmes

The increasing policy focus worldwide on enhancing women's access to Information and Communication Technologies (ICTs) has spawned critical debates on what kind of access can be meaningful. It is clear that having a mobile or getting on to broadband is not enough. Being connected can be empowering only if women experience the socio-

economic and political gains that such connectivity brings. This calls for designing connectivity infrastructure in a way that accounts for gender realities.

Digital India's core strategies for provisioning connectivity infrastructure include:

● universalising access to mobile connectivity;

● development of national fixed broadband highways for the provisioning of bandwidth-intensive Internet services in welfare delivery, healthcare and education; and

●establishment of public access points in all 2,50,000 *Gram Panchayats*.

> **Being connected can be empowering only if women experience the socio-economic and political gains that such connectivity brings. This calls for designing connectivity infrastructure in a way that accounts for gender realities.**

3.2.1 Universal access for women: failure to follow up on policy commitments and scale up innovative pilots

In December 2016, the Telecom Regulatory Authority of India (TRAI) proposed that a universal data allowance of 100 MB be provided to all rural subscribers through the Universal Service Obligation Fund (Dubbudu, 2016). For women and members of marginalised socio-economic communities, whose access to the Internet is hindered by affordability barriers, such an allowance, especially if linked to subsidised provisioning of ICT gadgets, can make a huge difference. But this proposal is languishing and there has been no follow-up action. This is part of a larger problem of extreme under utilisation of the Universal Service Obligation Fund (USOF). In November 2017, the Parliament's Standing Committee on Finance expressed concern about the large amount of underspent funds in the USOF: of the 75,000 crore levy collected over the past 14 years, only 40,000 crore has been spent (IANS, 2017).

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Against this backdrop, the *Sanchar Shakti* scheme initiated by the Department of Telecommunications in 2011 is a noteworthy, albeit, small scale, effort to use the gender budget of the USOF creatively for expanding women's meaningful access to connectivity. Under this scheme, subsidised, mobile-based value-added informational services are provided to women's collectives through small-scale projects in select locations, with private sector partners. The intent behind provisioning mobile-based VAS for women's collectives was to *"create a demand for information/ VAS/ICT services in rural areas, (enable the) digital*

inclusion of rural women, reduce the exploitation and harassment (of women and marginalised groups) due to information asymmetry in rural areas (with respect to) their … entitlements from the government and equip them to demand greater accountability from the local government machinery" (http://usof.gov.in/usof-cms/usof-sanchar-shakti.jsp, cited in Chami, 2016). This scheme has also attempted to open up new ICT opportunities for women's enterprise, through supporting the establishment of SHG-run mobile repair, modem repair and solar powered charging points in rural areas.[3]

> **However, the *Sanchar Shakti* scheme has not been strengthened and scaled up, taking into consideration the insights from the evaluation. In 2015-16, the Department of Telecommunications put up a budget request of a mere 1.5 crore. Data could not be located for subsequent periods.**

In 2014, the Department of Communications commissioned an internal evaluation of the mobile VAS component of the *Sanchar Shakti* scheme, which observed that:

"(The design of the mobile VAS component) cater(s) to a limited set of needs, bringing benefits, but not adequately covering what may be needed to change the information power equations in the local context. The women (beneficiaries) may have queries, and may have citizenship based needs that are not possible to address without human facilitation that entails other resources and investments. A service provider approach may stop at a point from where other pathways for women's information needs may have to be explored [such as institutionalised mechanisms at the grassroots for supporting women in acting upon the information received, by demanding their rights and entitlements] (Note submitted by internal evaluation team to DoT 2014)."[4]

However, the *Sanchar Shakti* scheme has not been strengthened and scaled up, taking into consideration the insights from the evaluation. In 2015-16, the Department of Telecommunications put up a budget request of a mere 1.5 crore. Data could not be located for subsequent periods.

3.2.2 Broadband Strategy: marred by a socially agnostic approach to demand generation

The creation of national broadband highways has been a priority for the government of India, even under the predecessor to the *Digital India* programme, the National e-governance Plan (NeGP). *Digital India* has carried forward the three main prongs of the NeGP's broadband strategy:

(a) the development of the State-wide Area Network (SWAN) to provide closed connectivity with a secure data environment to government offices from state to district to block level, in all states and union territories. The intent of SWAN is to provide the infrastructural backbone that can support government departments and agencies in making the transition to digitalised governance. As on date, SWAN has been implemented across the entire country except in 2 states (Ministry of Electronics and Information Technology, 2017c).

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3 Excerpt from an unpublished case study report of the scheme prepared by Ms. Vijaya Gupta, architect of the scheme.
4 Note submitted by the internal evaluation team to Department of Telecommunications in 2014. Anita Gurumurthy, IT for Change was a member of this team.

(b) the National Knowledge Network, a unified high speed network backbone for higher education and research institutions in India. Currently, 1646 institutions are connected (nkn.gov.in, 2017).

(c) the National Optic Fibre Network/ Bharat Broadband scheme that seeks to provide fixed line broadband access to all 2,50,000 *Gram Panchayats* of the country, and enable rural citizens to reap the benefits of *"accessing ICT-enabled services – public, private, and social – ensuring inclusive economic and social growth"* (Department of Electronics & Information Technology, 2013). The scheme focuses on last mile connectivity to public institutions upto the *Gram Panchayat* level, along with enabling private ISPs, TSPs and cable operators to offer services to individuals and business users.

Firstly, the implementation of Bharat Broadband and GUN has been inordinately delayed. Only a mere 17,000 Gram Panchayats have been connected as of 31 March 2017 (Gairola, 2017). Further, the dynamics of how demand for broadband is generated at the last mile has not been clearly understood.

To ensure effective utilisation of Bharat Broadband infrastructure, the Government User Network (GUN) project has been introduced as part of *Digital India*. GUN seeks to set up community wifi points at the *Panchayat* level, and extend connectivity to other government institutions at the village level, in addition to the *Gram Panchayat*, such as schools and post offices. (Committee on NOFN, 2015). Further, Meghraj Cloud has been set up to support cloud computing requirements of government department and agencies across the country, as governance at all levels increasingly moves online with the development of a nation-wide fibre backbone.

Digital India views the integration of these five elements – SWAN, NKN, Bharat Broadband, GUN and Meghraj Cloud – as the route to creating a national information infrastructure that can open up access to connectivity and broadband services for all citizens. But this vision has failed to materialise, mainly because of the inadequacies of strategies for last-mile connectivity. Firstly, the implementation of Bharat Broadband and GUN has been inordinately delayed. Only a mere 17,000 *Gram Panchayats* have been connected as of 31 March 2017 (Gairola, 2017). Further, the dynamics of how demand for broadband is generated at the last mile has not been clearly understood.

As a senior bureaucrat from the Department of Telecommunications shared with us, in a conversation about Bharat Broadband:

" ….broadband infrastructure is imagined as a pipe, and the idea seems to be that once the pipe is laid, last mile connectivity and relevant content services for rural communities will automatically emerge. However, it is not correct to imagine that this will be automatically taken care of, by market forces. At this

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point, in rural areas, demand for broadband may not be large enough to attract private players."

Nevertheless, through the *Digi-Gaon* programme launched in 2017, the Union government has been actively pushing for a public-private-partnership model to promote last mile connectivity and the development of meaningful content services in tele-education, tele-health, and skill development at the *Gram Panchayat* level. This initiative seeks to transform 1050 villages into 'Digital Villages' with public wi-fi and other e-services, in collaboration with private companies such as Microsoft India and ICICI Bank. (Shravani, 2017; Biswas 2017). However, this approach fails to recognise that PPP models may not be able to deliver in terms of reaching connectivity to those who cannot afford to pay and ensuring that the design of content services addresses the needs and priorities of different sections of rural communities, especially women and dalits. As the senior bureaucrat from the Department of Telecommunications perceptively observed:

" The need of the hour is to simultaneously invest in broadband infrastructure development and creative models for content development at the last mile involving community organisations, youth groups, women's collectives and so on. This is because different sections of rural communities have different needs. Marginalised women may have certain requirements. Farmers may have other needs. Only by involving all these different sections can we ensure that we provide specialised services that meet their different needs….And this process is as integral to the broadband programme as the infrastructural element."

3.2.3 Common Service Centres: lack of evidence about impacts on women's lives

India's country-wide network of Internet-enabled one-stop-shop centres - Common Service Centres (CSCs) - covering 2,50,000 *Gram Panchayats* of the country provide a range of services from Internet browsing, DTP services, and facilitated access to e-services of the government and commercial digital services, to digital literacy trainings.

A public private partnership model has been adopted for the scheme, in which a village level entrepreneur (VLE) is engaged as a franchisee by the government to manage the CSC. The VLEs are expected to break even through the commission earned on e-governance services and revenue generated from the other commercial services, such as fees from digital literacy trainings, service charges for business transactions, Internet browsing charges etc. Research studies have called attention to the tension between the scheme's emphasis on financial sustainability on the one hand and inclusive public access on the other hand (Kuriyan and Ray 2009, IT for Change 2010).

The official discourse on *Digital India* has highlighted the scheme's ability to open up new opportunities for women to become digital entrepreneurs at the helm of *"an information technology revolution for social change"* (Abbas, 2016) and women VLEs

have been felicitated on numerous occasions (Abbas, 2016; CSC in News, 2017). However, this claim is not backed by robust evidence.

Data about the number of women VLEs is not consistent. In October 2017, the Ministry for Electronics and Information Technology claimed that 90% of Common Service Centres are owned and managed by women (Ministry of Electronics and Information Technology, 2017d). The following month, Ravi Shankar Prasad, the Minister for Electronics and Information Technology announced this figure as 34,000, which suggests that just over 13% of the CSCs that are currently operational are run by women entrepreneurs (RaviShankarPrasad, 2017).

> **The official discourse on Digital India has highlighted the scheme's ability to open up new opportunities for women to become digital entrepreneurs at the helm of "an information technology revolution for social change" (Abbas, 2016) and women VLEs have been felicitated on numerous occasions**

Further, there is no strategy that the CSC scheme has adopted to promote women's uptake of the Internet and other digital services through these centres. As a senior bureaucrat from the Ministry of Electronics and Information Technology shared with us for this research:[5]

" In order to accurately assess if the Common Service Centres have led to women's empowerment, we need to understand how they have influenced women's access and use of the Internet. We need gender-disaggregated data that answers questions such as: how many women are visiting these centres? What services are they using? If women are at the front of CSC operations, is that making a difference? An evaluation of the CSCs based on such data is the need of the hour."

Official data on women VLEs lacks veracity. Also, whether women-owned enterprises – as per records – provide opportunities for women's economic and social empowerment, requires independent evaluation. Considering that the scheme requires VLEs to bring in investments, this eligibility criterion is itself likely to pose entry level barriers to most women.

3.3 Digital literacy programmes

Meaningful access presupposes investment in women's digital capabilities[6] so that women can take advantage of the new informational, communicational, and associational choices opened up by digital technologies (Gurumurthy and Chami, 2014).

'Digital literacy', a term that is often used in connection with digital competencies, is a major programmatic pillar of Digital India. In 2015, the government launched the *Digital*

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5   Interview carried out on 03 November 2017 for this research study.
6   Digital capabilities refers to a range of skill-sets that equip an individual to creatively use the Internet and Information and Communications Technologies for informational networking, asserting their voice, and building networks of support, all of which contributes to an expansion of strategic life choices. This requires not just basic digital literacy but also information, media and data literacies.

Saksharata Abhiyan (DISHA) that sought to provide digital literacy training to 52.5 lakh citizens in 4 years, including women frontline workers (ASHA[7] and *anganwadi* workers). By end 2016, the government claimed to have met this target. In 2017, a scaled up version - the *Pradhan Mantri Gramin Digital Saksharta Abhiyan* – of DISHA was launched. PMG DISHA seeks to train 6 crore people by March 31, 2019 and has a budget of 2351 crores. In the previous and current versions of the digital literacy programme, 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 (Ministry of Electronics and Information Technology, 2017c).

There is no strategy that the CSC scheme has adopted to promote women's uptake of the Internet and other digital services through these centres.

Third-party evaluations of DISHA, commissioned by the government, raise some questions about its effectiveness. Over two-thirds of beneficiaries had been selected in violation of the eligibility criteria, and SC/ST communities were under-represented (Council for Social Development 2017, as cited in Jain, 2017b).

With multiple burdens and relatively lower educational attainments, it is highly unlikely that older women or women from SC or migrant communities, benefited from DISHA[8]. It was also observed that though social media use had gone up among trainees, gains in terms of online information-seeking and performing digital transactions were limited.

Third-party evaluations of DISHA, commissioned by the government, raise some questions about its effectiveness. Over two-thirds of beneficiaries had been selected in violation of the eligibility criteria, and SC/ST communities were under-represented.

The second version of the programme, PMG DISHA has sought to address these shortcomings by putting in place measures for stringent authentication requirements for beneficiaries (such as the production of identity documents and certification from *sarpanch* at the time of registration) and instituting the completion of five independent digital transactions by trainees, as a course completion requirement. However, reports from the ground indicate that these changes have not necessarily improved implementation (Jain, 2017b). In Rajasthan, trainers are colluding with local communities by collecting *Aadhaar* cards and identity documentation from individuals, registering them, completing the tests on their behalf, and pocketing the training subsidy (ibid).

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7 Accredited Social Health Activists, community health workers of the Ministry of Health and Family Welfare.
8 The National Family Health Survey of India 2015-16 reveals that only 27.3% adult women in rural areas have had 10 years or more of schooling, as against 51.5% in urban areas. Also, Census data for 2011 indicates that 52.6% of adult SC women are literate.

Women need a gender-inclusive safe space at the village level where they can build digital skills over time, transition from basic digital literacy to advanced digital skills, and learn how to use these skills to access public information and governance services. This becomes essential since most women lack unrestricted access to connectivity at the household level and support to learn how to navigate online transactions.

There is an opportunity to create such a space through two schemes that are recent. The Village Convergence and Facilitation Centres being set up in *Beti Bachao Beti Padhao* districts and 200 high burden districts (affected by malnutrition) by the National Mission for Empowerment of Women[9]; and the *Mahila Shakti Kendras* scheme that seeks to provide one-stop convergence support services for rural women in 115 most backward districts can become the vehicle for a locally relevant digital literacy and skills component[10]. The mandate of the *Mahila Shakti Kendras* scheme includes provisioning of skill development, digital literacy, health and nutrition and employment services. The digital components of the strategy are however, not fully spelled out, and need strengthening.

> **Women need a gender-inclusive safe space at the village level where they can build digital skills over time, transition from basic digital literacy to advanced digital skills, and learn how to use these skills to access public information and governance services.**

Civil society interventions can also offer valuable insights for building such insights for building such digital spaces – providing new informational, communicative, and knowledge architectures for marginalised women[11].

9 http://www.nmew.gov.in/index1.php?lang=1&level=0&linkid=80&lid=25&ltypeid=2&domid=1
10 http://www.business-standard.com/article/current-affairs/centre-to-set-up-mahila-shakti-kendras-in-115-most-backward-districts-117112201153_1.html
11 One such example is Making Women's Voices and Votes Count - a project funded by the UN Fund for Gender Equality and supported by NMEW implemented in Karnataka and Gujarat between 2012-2015. See http://gender-is-citizenship.net/unwomen/

4 OUTCOME AREA 2. GENDER-RESPONSIVENESS OF E-SERVICE DELIVERY STRATEGIES

4.1 The state of women directed e-services

e-Kranti, or the programmatic pillar for electronic delivery of services, aims at achieving a "*government-wide transformation*" through a digitalised system that promotes efficiency, transparency and reliability in welfare service delivery ("e-Kranti", n.d.). However, except for urging the prioritisation of language localisation requirements in the development of e-service applications, the guidelines for design and implementation of *e-Kranti* do not make any reference to gender responsive design principles ("Principles of e-Kranti", n.d.). E-service design is viewed as a technical exercise, and not as a process that is integral to public policy decision-making. Central government ministries and state government departments put up project proposals pertaining to digitalisation of their existing services to the *e-Kranti* Programme Management Committee for appraisal. Approved projects are termed 'Mission Mode Projects'. Project proposals are currently evaluated only for their technical aspects, and there is no social impact assessment (Programme Management Structure of e-Kranti, n.d.).

No process for integrating gender perspectives in e-service design has been instituted. Except for one Mission Mode Project proposed by the Ministry of Women and Child Development, on developing a real-time monitoring system for the Integrated Child Development Services scheme[12], there is no other reference to the need for gender responsive e-services.

In a similar vein, the Draft National Policy for Women 2016 also lacks a strategic vision on leveraging e-government as a public policy instrument for gender equality. It only has a few sporadic references to the importance of bridging the gender digital divide, promoting STEM careers for women, and addressing online gender-based violence, all very important aspects for women's empowerment, no doubt, but not enough to qualify as a digital empowerment framework (Ministry of Women and Child Development, 2016a). Thus, on the whole, there is no coherent strategy towards the design and roll-

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[12] Integrated Child Development Services scheme provides food, preschool education, and primary healthcare to children under 6 years of age and their mothers, through a country-wide network of early childcare centres.

out of women-directed e-services. However, different Ministries and departments at national and sub-national levels have had some success in implementing what are essentially, ad-hoc projects, for harnessing digital technologies towards women's empowerment. These are discussed in some detail, in the subsequent sections.

4.1.1 Successful pilots in public information outreach remain to be scaled

Health and agriculture are the two main domains in which digitally-enabled public information outreach efforts have been undertaken by the government. The extent to which these efforts have been gender-inclusive is evaluated below.

> **No process for integrating gender perspectives in e-service design has been instituted. Except for one Mission Mode Project proposed by the Ministry of Women and Child Development, on developing a real-time monitoring system for the Integrated Child Development Services scheme, there is no other reference to the need for gender responsive e-services.**

(a) Maternal health information services and m-learning for frontline health workers
In January 2016, the Ministry of Health and Family Welfare, with design inputs from BBC Media Action, rolled out two mobile health applications, seeking to address health challenges resulting in high maternal mortality and infant mortality rates (Ministry of Health and Family Welfare, 2016):

- *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. This service has been made available free-of-cost to all women who register their pregnancies and/or births with the public health system, in the states of Bihar, Odisha, Jharkhand, Madhya Pradesh, Rajasthan, Uttarakhand and Uttar Pradesh. The messages are directed not just at women, but also at their husbands: as the service recognises that male involvement is essential for effective outreach.

- Mobile Academy is an IVR-based training course for ASHAs/frontline workers, on reproductive, maternal, newborn and child health, to equip them in performing their role more effectively. The 190-minute course can be accessed by ASHAs from any location, and completed at their convenience. The course comprises nine chapters, 36 lessons, and nine quizzes covering nine life-saving behaviours, all accessed through a voice call. Content is delivered in the voice of a "*lady doctor*" - "*Dr. Anita*" - who speaks the local dialect. This is viewed as a complement to the *Kilkari* intervention, and it has been rolled out in Jharkhand, Madhya Pradesh, Rajasthan and Uttarakhand.

Pilot evaluations conducted by BBC Media Action bear testimony to the efficacy of these applications.[13] Research studies in other contexts in the global South also highlight how contextualisation of content, buy-in from male family members, and engagement with frontline health workers, are critical to the success of mobile-based maternal health information services (Alam & Raihan, 2013).

(b) Web and mobile-based information services in agriculture
The Ministry of Agriculture and Farmers Welfare has launched two key initiatives that seek to provide information services for farmers and those engaged in agricultural livelihoods (IT for Change, 2015):

(1) The Farmers' Portal - that brings together over 800 websites of central and state governments in an attempt to create *"a one stop shop for meeting all informational needs relating to agriculture, animal husbandry and fisheries sectors production, sale/storage...(for) an Indian farmer"*. The portal is currently under construction and there are plans to add audio-visual content in different local languages, pertaining to specific technical aspects of agriculture, horticulture, animal husbandry and fisheries, tailored to the requirements of farmers from different geographies.

> **The extent to which these interventions have positively transformed the lives of women farmers, by promoting livelihoods security and expanding choices, is questionable.**

(2) The *mKisan* portal that offers a range of Pull and Push SMS, IVR informational services, and interactive mobile services where farmers can query agro-experts. In addition, it also offers mobile apps for smart phone users.

The extent to which these interventions have positively transformed the lives of women farmers, by promoting livelihoods security and expanding choices, is questionable.

A 2014 evaluation[14] of *mKisan* mobile services by GSMA has flagged that *"...Poorer and less-educated farmers, as well as women may be less likely to use mKisan on a repeat or regular basis… only 9% of the customer base are female"*(Palmer, 2014). Gender-disaggregated data about the number of users of the Farmers' Portal is not available.

Considering that the bulk of women in agriculture are small and marginal farmers who lead an economically precarious existence,[15] ICT interventions for information outreach can make a difference only if there is a system of effective, public interest intermediation at the last mile. Unfortunately, this does not seem to be the case. There has been no attempt to link ICT strategies to agricultural extension activities directed at women farmers (Ministry of Agriculture and Farmers Welfare, 2017)). Similarly, though the scheme guidelines for the *Mahila Kisan Sashaktikaran Pariyojana*[16] recommend that projects explore the technological opportunity for information dissemination, there is no systematic linking-up with existing digital interventions of the department.

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13 Please see http://www.rethink1000days.org/publication/
14 More recent gender-disaggregated data on *mKisan* subscribers is not available from the Ministry's reports in the public domain.
15 Mahila Kisan Adhikar Manch has highlighted that despite women being involved in 60-75% of all farming related work, they remain invisible as farmers, and are not recognised and supported as farmers.
16 An on-demand scheme that aims at promoting sustainable agricultural livelihoods for women through small-scale projects initiated in partnership with community organisations. This is part of the National Rural Livelihoods Mission of the Ministry of Rural Development.

4.1.2 e-learning and knowledge portals fall short of user-centric and participatory design

The Ministry of Women and Child Development, in partnership with the National Institute of Public Cooperation and Child Development,[17] has set up *'e-Archive'*: an open access digital library of educational material pertaining to health, nutrition, *Panchayati Raj*, and other learning resources related to women's empowerment. The portal is envisioned as a resource bank that can support self-directed learning. But the reach of the portal is compromised by the fact that the majority of resources are in English, and there has not been adequate attention to localisation of resources. However, in the area of nutrition education, an online dialogue platform linked to the portal has also been introduced. This Nutrition Resource Platform is intended to serve as *"an interactive knowledge resource base which facilitates real quick time interaction, exchange of ideas, discussions between Integrated Child Development Services (ICDS) and other stakeholders"* to bring the latest insights around nutrition and child care, into field practice. Reaching out to frontline *anganwadi* workers and addressing their learning needs through audio-visual learning resources, online discussions, and interactive IVR services linked to the platform is a key objective. Currently, the platform does not seem to be active. There are only 2 discussion threads (both containing a single post from the platform administrator dating back to early 2016), and there is no evidence of participation from frontline workers.[18]

> **Considering that the majority of *anganwadi* workers from rural areas have limited access to the Internet and may need digital and other kinds of support to participate in a peer learning network, an important initiative such as this needs to be re-imagined for how it can support specific outcomes in relation to women's/ girls' nutrition and health.**

Considering that the majority of *anganwadi* workers from rural areas have limited access to the Internet and may need digital and other kinds of support to participate in a peer learning network, an important initiative such as this needs to be re-imagined for how it can support specific outcomes in relation to women's/ girls' nutrition and health. In this regard, experiences of the Kudumbashree Mission of the state government of Kerala may provide useful insights **(Box 2)**.

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17 The NIPCCD is an organisation that seeks to promote voluntary action research, training and documentation in the overall domain of women and child development. It is a registered society that functions under the aegis of the Ministry of Women and Child Development.
18 See http://poshan.nic.in/

Box 2. Using digital strategies to strengthen peer learning and networking of grassroots women's collectives: The case of Kudumbashree Mission, Government of Kerala

Kudumbashree Mission is a state-wide programme that has focused on building women's self-help groups, and enabling them to access livelihood and income generation opportunities, since 1998. Currently, the programme reaches out to over 43 lakh women across Kerala, who are organised into 2,77,175 neighbourhood groups across 1073 wards of local government bodies (including *Gram Panchayats* and municipalities). The Mission has been using a range of digital strategies to support its grassroots women's collectives and strengthen programmatic activities.

In 2012, a web portal (christened *'Sreesakthi'*) was set up to facilitate trans-local dialogue between women's collectives from different geographies. The intention was to provide an open source discussion platform to complement face-to-face gender trainings with neighbourhood groups in different locations, by promoting trans-local discussions on gender and governance and women's rights. The Kudumbashree programme management team recognised that not all women members had household-level access to the Internet. And therefore, they computerised the village level offices of the programme, by setting up ICT-enabled gender help desks that would provide facilitated access to the Internet for women members.

This effort proved extremely successful, and the portal became integral to the effective implementation of three rounds of state-wide gender trainings with Kudumbashree groups, between 2012-15. During this period, the membership of the portal was also gradually opened up to any interested citizen. Local government representatives as well as Ministers used the portal to directly interact with Kudumbashree groups. The discussions on the portal were moderated by the Kudumbashree team, to prevent hate speech, abuse and harassment. Thus, in addition to being an internal learning space for Kudumbashree collectives, the portal also emerged as a gender-inclusive, public discussion forum where sensitive issues such as domestic violence, alcoholism among men in local communities, and corruption in local government could be critically examined.

The *Sreesakthi* portal is now wound up, and the Kudumbashree Mission has gone on to experiment with a range of other digital tools. In March 2017, the government of Kerala declared that Internet access to be a human right, and decided to provide connections to 20,00,000 families. The enabling macro-

institutional environment for digital efforts has led to positive fallouts in the use of technology in information and public services.

In 2017, a digital newsletter was launched by Kudumbashree to provide monthly informational updates to neighbourhood groups on various government schemes, updates about the Mission's activities, and experience sharing by women from different locations. A mobile app *'Sandesh'* has been developed for smooth coordination between the programme team at state headquarters and neighbourhood groups. A digital accounting system has been introduced to increase transparency and accuracy of group finances. The Mission is planning to shift all neighbourhood groups to 100% digitalised payments, to help them undertake financial transactions without visiting banks.

In the Kudumbashree programme, e-learning and knowledge interventions for grassroots women have been deployed using a blended learning model effectively combining ICT and face-to-face methodologies. Along these lines, the Nutrition Resource Platform could be re-positioned as a critical learning resource within a systematised ongoing capacity-building programme directed at *anganwadi* workers.

Further, considering that *anganwadi* workers are already overburdened, it may be useful to incentivise their uptake of the Nutrition Resource Platform. For example, they could be issued smart phones and access to the Nutrition Resource Platform could be zero-rated. Additionally, for viewing resources on the Platform, *anganwadi* workers could receive mobile data/ talk time reward points, building on the incentive model adopted by the IAP Health Phone programme (See **Box 3**).

Box 3. IAP Health Phone programme: using subsidised mobile data as an incentive to promote e-learning

The IAP Health Phone programme, launched in 2015, seeks to educate 6 million girls and women between 13 and 35 years of age on better health and nutrition practices by 2018. It is a joint initiative of the Indian Academy of Paediatrics (IAP), Ministry of Women and Child Development, and UNICEF, supported by Vodafone India. IAP has entered into a partnership with Vodafone India, in order to incentivise the viewing of four nutritional awareness videos developed by the Ministry of Women and Child Development and UNICEF, under the *Poshan* series of context-appropriate learning videos on health and nutrition. Under this arrangement, Vodafone customers can download these

videos free of data charges. Also, on viewing these videos, customers get a talktime incentive of 10 INR. This model can be expanded to include tie-ups with all telecom service providers operating in the market and can be taken up for public information broadcasts/ public interest content services developed by government agencies. The incentive can also include data top-ups.
Source: http://pib.nic.in/newsite/PrintRelease.aspx?relid=122229

4.1.3 Technology-enabled crisis support systems lack an integrated institutional design

(a) Helplines and panic buttons
In 2016, the Ministry of Women and Child Development approved a proposal for the establishment of a national helpline with a common number '181' linked to One Stop Centres for medical, legal and psychological support to women affected by violence, utilising Nirbhaya funds (Ministry of Women and Child Development, 2016b). It has also recommended mandatory installation of a panic button on mobile phones, that can help women in distress signal for help from local police and family members. In April 2016, the Department of Telecommunications notified the "Panic Button and Global Positioning in Mobile Phone Handsets Rules". In November 2017, a trial run of the panic buttons was announced in Uttar Pradesh. However, women's rights activists and civil society organisations have highlighted that these initiatives do not add up to a robust institutional support system for GBV redress. A 2017 Human Rights Watch research study reveals the inefficacy of the One Stop Centres (OSC) that are intended to backstop the national helpline on GBV :

".....the OSC scheme was set up hastily, without meaningful consultations with local rights groups and NGOs already running crisis-intervention centers in different parts of the country operating in hospitals, police stations, or courts. The government also failed to integrate these existing centers or build on good practices from models developed in various parts of the country. It did not maximise its reach to victims of gender-based violence who usually come to hospitals, police stations, and courts." (Human Rights Watch, 2017).

Similarly, research by the Delhi-based think-tank Centre for Budget and Governance Accountability and *Jagori*, an NGO, have called attention to the tardy implementation of the 24-hour women's helpline and the one stop crisis centers. The budget for these initiatives only started to be used in 2015-16, three years after the Nirbhaya Fund was introduced (Centre for Budget and Governnance Accountability and *Jagori*, as cited in Human Rights Watch, 2017). As of August 2017, only 151 One Stop Crisis Centres have been established (The Indian Express, 2017).

Activists have also expressed concern about how the introduction of the panic button may just end up increasing the price of mobile handsets without fixing underlying factors that dissuade women victims of GBV from seeking help, that is, social stigma and unsupportive attitudes of police officials (Borpujari, 2016).

(b) Web channels for reporting sexual harassment at workplace
The Ministry of Women and Child Development has explored the use of web platforms for strengthening GBV redress mechanisms through the She-Box online portal for registering complaints of workplace sexual harassment.She-Box has been tasked with covering all complaints that fall under the purview of the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 (Ministry of Women and Child Development, 2017a). The interface of the portal is only in English, but working within this limitation, the portal attempts to provide a user-friendly experience by putting up FAQs and other informational resources in text and video formats ("SHE-Box Online Complaint Management System",n.d).

> **"…..the OSC scheme was set up hastily, without meaningful consultations with local rights groups and NGOs already running crisis-intervention centers in different parts of the country operating in hospitals, police stations, or courts. The government also failed to integrate these existing centers or build on good practices from models developed in various parts of the country. It did not maximise its reach to victims of gender-based violence who usually come to hospitals, police stations, and courts." (Human Rights Watch, 2017).**

A unit in the Ministry of Women and Child Development has been set up to process all complaints received (ANI, 2017b), by either forwarding the complaint to the Internal Complaints Committee of the concerned organisation, or the Local Complaints Committee set up by the district administration in cases where the Internal Complaints Committee has not been constituted. However, the Ministry does not play any role except channeling the complaint to existing resolution mechanisms that have not proven to be very responsive in the first place. The majority of workplaces have not constituted an Internal Complaints Committee, despite it being mandatory under the law (Reuters, 2017). Similarly, in most state governments, *"functional local complaint committees are lacking"* (Mukherji, 2016).

She-Box portal is a good start, but in order to enhance its effectiveness, the resources on the portal require to be translated into regional languages. State governments should also invest in setting up companion portals. Also, taking a leaf out of the Protection of Children from Sexual Offences - POCSO e-box for victims of child sexual harassment (or their friends, relatives, parents or guardians), the Ministry should ensure that She-Box is

backed by a universal toll-free number to support victims of workplace sexual harassment from across India.[19]

(c) #Helpme WCD Twitter campaign
A Twitter outreach initiative for women facing abuse, harassment, or violence, hashtag '#HelpMeWCD', has also been launched by the Ministry of WCD. The Twitter hashtag has triggered an online conversation on the many issues of abuse and harassment. There were 1037 tweets at this hashtag between March-October 2017.

But the Twitter campaign cannot be expected to produce deep change, as it is not embedded in any longer term strategy to strengthen institutional mechanisms on the ground for GBV redress. Also, when victims come out on Twitter, they are at risk

> **Activists have also expressed concern about how the introduction of the panic button may just end up increasing the price of mobile handsets without fixing underlying factors that dissuade women victims of GBV from seeking help, that is, social stigma and unsupportive attitudes of police officials (Borpujari, 2016).**

(d) Email ids and social media accounts for addressing online gender-based violence
In July 2016, the Ministry of WCD set up a Special Cell for Women's Protection on Social Media, with a dedicated email id, and associated social media accounts. The idea was that the Cell would work with state governments and social media companies to ensure effective redress. Official statistics indicate that in the first year of the establishment of the Special Cell, only 96 complaints were received, from all sources combined.

> **But the Twitter campaign cannot be expected to produce deep change, as it is not embedded in any longer term strategy to strengthen institutional mechanisms on the ground for GBV redress. Also, when victims come out on Twitter, they are at risk of privacy violation, leaving them vulnerable to future harassment.**

4.1.4 Digital monitoring systems widely adopted, but lacking adequate focus on public accountability

(a) Application for monitoring of nutrition services
Supplementary nutrition services are provided to pregnant women, nursing mothers and children below 6 years, through the network of *anganwadis* or government-run child care services at the village level. In 2016, the Ministry of Women and Child Development launched a Common

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19   For more details, see http://ncpcr.gov.in/showfile.php?lang=1&level=2&&sublinkid=1230&lid=1475

Application Software (CAS) for the real time monitoring of nutrition services in 3.86 lakh *anganwadis* across 162 high-burden districts in the country. CAS seeks to capture real-time data that will enable supportive supervision and timely intervention by department officials. Data is collected in two ways: through the *anganwadi* worker application that runs on smart phones, and the *anganwadi* supervisor application that runs on tablets. In the districts where the project has been rolled out, *anganwadi* workers and supervisors have been provided connectivity. CAS analyses this data and presents it in the form of web-enabled dashboards at block, district, state and central level. The application software was developed by the Bill and Melinda Gates Foundation and subsequently handed over to the Ministry of Women and Child Development, along with the source code.[20]

A major shortcoming in the design of the CAS is its narrow conceptualisation of monitoring for accountability. Data travels only in one direction, upwards, and there is no room for community-based monitoring arrangements. In fact, there is no integration with existing local self-government institutions: a key omission considering that supervision of *anganwadis* is part of the responsibility of every Gram Panchayat.

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(b) MIS for incentive-based payments for ASHAs
ASHAs, women frontline workers of the maternal and child health system, receive a monthly incentive-based pay according to the number of support services they carry out at the community level. Prior to the introduction of digital systems, ASHAs would submit filled-in claim forms to the local Primary Health Centre, which would be sent to the block office where payment orders would be processed, after verification of the claims by the Medical Officer in charge. The whole cycle took 2-3 months. In 2015, the state government of Rajasthan came up with a digital system – the ASHA Soft portal, in an attempt to speed up this workflow. ASHAs have to digitally file their claims data on this portal, with support from Primary Health Centres and/or computer operators at the block level, by a specified monthly deadline. The idea is that such digitalisation of claims records will enable speedy verification by block level functionaries, leading to timely release of payments. Subsequently, Karnataka also adopted this system.

In practice, this system has been haunted by numerous difficulties and has led to hardship for ASHAs, as revealed by media reports from Karnataka. The challenges of digitalising data within the prescribed time, due to non-availability of data entry support

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[20] http://icds-wcd.nic.in/issnip/ISSNIP-Web-Contents/LEFT%20SIDE%20TABS/8-Pilots%20&%20Innovations/Community%20Based%20Events/
MoM_MEETING_NIC_1_8_16_issued.pdf

on the ground, power outages and connectivity failures, have led to many ASHAs being unable to submit their claim forms by the specified deadline. Further, software glitches lead to incomplete data entry, leaving ASHAs unable to claim full payment for work that has been completed (Sathish, 2017).

(c) Digital Gender Atlas for Girls' Education
This tool was developed by the Department of School Education and Literacy, Ministry of Human Resource Development, with support from UNICEF, and is a hands-on management tool that seeks to support state/district/block level education administrators in taking timely action to address girls' exclusion from the public education system. Using official data sets pertaining to educational attainments of girls at pre-primary, primary and secondary levels, incidence of child marriage, and prevalence of child marriage,[21] the Atlas generates a spatial map that enables the identification of low performing geographic pockets where urgent intervention is required. In addition to facilitating comparison of girls' educational attainments across different geographies, the Atlas also supports location-specific trends analysis. The Atlas uses open source technologies to scrape existing datasets in the public domain. Unfortunately, post-2015, the Atlas has not been updated.[22]

(d) Digital monitoring systems in employment and welfare schemes
The implementation of key programmes for social welfare in India does not follow a standard protocol for tracking and monitoring. For instance, the National Social Assistance Scheme (covering elderly, widow and disabled pensions), PDS, and Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) – all adopt different database designs, with varying adherence to principles of transparency and accountability. The key purpose of monitoring digitally seems to privilege technological affordances of centralisation, and in the absence of binding principles for public accountability in digital data sets, these tools have emerged out of particular political and bureaucratic motivations and proclivities. With the result, they do not make way for participatory governance. (More in Section 5.2.1).

The database of the MGNREGS is often held up as an exemplar for citizen monitoring. The scheme provides 100 days of employment at minimum wages to anyone who opts in, and has been pivotal in bringing a modicum of livelihood security to poor women. The scheme guidelines mandate that one-third of beneficiaries should be women, but this proportion has been steadily rising over the years. In fact in 2016-17, 56% of workers in the MGNREGS were women (The Wire, 2017a). Because of effective civil society advocacy on the need to create a transparent information and data system that would support localised citizen audits, a digital Management Information System was set up by the government. This MIS provides real-time information about all aspects of the scheme's implementation: worker enrollment, works sanctioned, muster roll records from work sites, payments made, payment delays and arrears, and so on. On all the above-mentioned facets, citizens can go online and generate reports of their choice. By making disaggregated data available, the MIS has been a key resource for social audit teams of certain state governments and activists, in curtailing local level corruption.[23]

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21 In specific, the Unified District Information System for Education Data, Census data and District-level Health Surveys.
22 http://mmistech.com/atlas/
23 At the sub-national level, state governments have also implemented mobile-based beneficiary tracking systems – the Chattisgarh government's PDS programme sends messages to beneficiaries on dispatch of food grain trucks to local rations shops and the Kanyashree conditional cash transfers scheme of the state government of West Bengal sends mobile alerts of bank transfers.

It is however, noteworthy that definitions of key data categories for the MGNREGS MIS are not explicit or public, thus masking the back-end assumptions of front-end numbers generated by the system in reports. For instance, it has been pointed out that the method of calculating delay compensation amount is flawed, causing denial of rightful entitlements to citizens (Narayanan, et.al, n.d).

On the whole, with respect to e-services for women, what seems to emerge is a fragmented approach based on one-off techno-solutionism rather than an embedded approach employing appropriate techno-processes. There are a few "islands of excellence" - initiatives of state governments and of the MWCD that hold the promise of 'disruptive' change in women-directed information outreach, context-appropriate e-learning, and citizen-centred monitoring. Some of these, it must be remembered, also predate *Digital India*, and are efforts that were undertaken by the previous government.

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On gender based VAW, active experimentation with technology reflects the pulse of current trends the world over. What seems to be emerging is a need for guiding frameworks in the social sectors that central and state agencies must use for promoting women's information, learning, networking, communication, monitoring, safety and other needs. These initiatives will also require to be optimised through cross-departmental coordination. In the absence of design protocols for MIS and monitoring data bases, a large majority of systems (including the tracking system for CSCs discussed in Section 3.2.3) tend to veer towards managerial control, which could also directly impinge upon citizen right to audit government. This requires urgent course correction for governance systems to be answerable to women.

3 4

CHECKLIST FOR DESIGN OF WOMEN-DIRECTED E-SERVICES

☐ **DIGITALLY-ENABLED INFORMATION OUTREACH SYSTEMS FOR WOMEN**

- Gender-aware design informed by social impact assessment studies and public consultations

- Buy-in from male family members

- Context-appropriate content in local dialect

- Effective use of voice messaging platforms in addition to textual interfaces

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☐ **E-LEARNING AND KNOWLEDGE INTERVENTIONS FOR WOMEN**

- Blended learning model clubbing digital and face-to-face methodologies

- Supportive moderation to ensure that online learning platforms are safe spaces for women

- Audio-visual learning resources as important as textual resources

☐ **DIGITAL MONITORING SYSTEMS FOR WOMEN-DIRECTED SERVICES**

- Privilege the citizen, and not top-down monitoring

- Provide localised data to support course corrections

☐ **TECHNOLOGY-ENABLED CRISIS SUPPORT SYSTEMS**

- Institutional back-stopping for crisis helplines and web portals

- Privacy and data security safeguards in web-based crisis reporting services

4.2 Aadhaar-enabled welfare service delivery: Implications for women's rights and gender inclusion

Aadhaar is a digitalised 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. By linking *Aadhaar* to welfare services delivery, the government has sought to restructure the design and implementation of service delivery to ensure *"that the Citizen-Government Interface is Incorruptible".*[24]

This system is being currently leveraged by state agencies in their quest for corruption-free welfare delivery, in the following ways:

(1) Seeding an individual's unique *Aadhaar* number to his/her identity record in welfare scheme databases, to weed out fake entries and duplication errors.

(2) Generating a reading of an individual's biometrics at the point of service delivery and authenticating this against his/her record in the *Aadhaar* database, to reduce the scope for impersonation/fraudulent transactions and misuse of discretionary powers by lower level officials.

(3) Linking *Aadhaar* numbers of beneficiaries to their bank accounts and mobile numbers, to create an *Aadhaar*-enabled digital payments system for direct benefit transfer of subsidies (DBTs) that reduces payment delays and eliminates middlemen/ brokers. The government is opening zero balance bank accounts for unbanked citizens through the *Jan Dhan Yojana*, in order to bring them into the new DBT net that is being set up. In popular parlance, this system is hence referred to as 'JAM' or the *Jan Dhan-Aadhar*-Mobile number triad for transfer of subsidies/ benefits.

> **Considerable hope has been vested in the potential of the JAM triad to ensure universal financial inclusion.**

Considerable hope has been vested in the potential of the JAM triad to ensure universal financial inclusion.

The central government is currently pushing the pedal on *Aadhaar*-enabled welfare delivery (UIDAI, 2016), as it is seen as an essential foundation[25] for "more efficient" (Doshi, 2017) welfare spending that ensures "people get what they rightfully deserve"(Banerjee, 2017). This push comes from a techno-managerial faith in the power of technology/digital automation to address historical inefficiencies in welfare systems. *Aadhaar*-enabled restructuring implicates a number of welfare schemes that are critical for marginalised women. More details in Section 4.2.3.

However, given the low levels of digital preparedness of public administration in India, especially at the last mile, *Aadhaar* seeding seems to present many challenges, belying

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[24] See http://www.narendramodi.in/shri-narendra-modi-shares-his-vision-for-digital-india-5944

[25] The government of India plans to introduce *Aadhaar*-enabled service delivery in over a 100 different schemes by 31 March 2018. Further, state governments have been notified that for the 28 centrally sponsored schemes, if they do not switch to *Aadhaar*-enabled service delivery by this deadline, funds will not be released.

the optimism around how far digital technologies can go in remedying injustices that are essentially social-institutional.

4.2.1. Violation of the right to privacy, dignity, life and livelihood

In its landmark judgment on the right to privacy, the Supreme Court of India has referred to the guidelines for handling citizen data prescribed by the Planning Commission's Group of Experts on Privacy (2012). According to these guidelines, collection limitation and purpose limitation principles (which mean that citizen data should be collected only for a specific purpose and used for that purpose alone) are integral to the right to privacy (Yamunan, 2017).

> **Considering that over 210 governmental websites have published citizen records with *Aadhaar* numbers and other personal details, the risk of unauthorised profiling by third parties increases. There is a high chance that they could link previously disjointed data silos pertaining to an individual by crawling these databases using the *Aadhaar* number as an identifier (Regidi 2017;**

In its current form, the *Aadhaar* system violates these principles. In fact, the absence of restrictions on the seeding of unique identification/*Aadhaar* numbers into public and private databases has led to a situation where individual profiling without authorisation has become much easier (Khera, 2017a).

Considering that over 210 governmental websites have published citizen records with *Aadhaar* numbers and other personal details, the risk of unauthorised profiling by third parties increases. There is a high chance that they could link previously disjointed data silos pertaining to an individual by crawling these databases using the *Aadhaar* number as an identifier (Regidi 2017; Khera 2017a).

This possibility for *Aadhaar* seeding with welfare records creates a contradiction between the right to privacy of citizens and the administrative need for increased visibility of beneficiaries. This tension becomes particularly significant for women from vulnerable backgrounds. Take the case of beneficiaries of the *Swadhar Grah* scheme for the rehabilitation of destitute women and women rescued from trafficking (Ministry of Women and Child Development, 2017b). Or, the rehabilitation scheme for individuals engaged in manual scavenging, a highly feminised occupation (Ghosh 2017), that provides beneficiaries with the necessary financial assistance to find other non-degrading avenues for self-employment (Krishna, 2017). Women may not want their records to reflect their occupational histories or any private information that may contribute to their public vulnerability. The convergence of beneficiary databases implies that women beneficiaries will be perennially marked in their future transactions with the state.

As Bezwada Wilson, social activist who has been leading a decades-long struggle for the eradication of manual scavenging, observes, "Oppressive identities are to be cast off, not documented and kept forever. What we need is a technology that will destroy this demeaning work and finish off this identity. Instead, what this is doing is branding us forever" (Ramanathan, 2017a).

HIV positive women have dropped out of treatment in states that require mandatory submission of *Aadhaar* numbers, fearing possible loss of privacy and the ensuing stigma (Rao,2017). The compulsory seeding of *Aadhaar* can thus impinge upon women's right to dignity, and their rights to life and livelihood.

Further, the absence of provisions for informed consent in *Aadhaar* enrollment processes means that poor and marginalised women are often in the dark about the specific ways in which *Aadhaar* is deployed in welfare delivery. As Jahnvi Andharia, women's rights advocate and scholar with long-standing experience of working with grassroots women's collectives in India, puts it:

" The *Aadhaar* enrollment form contains a clause that says *"I have no objection to the UIDAI sharing information provided by me to the UIDAI with agencies engaged in delivery of welfare services"*. Conversations with the women who are part of our *Sangathan* [*Mahila Swaraj Manch, a federation of elected women representatives in Bhavnagar district of Gujarat*] indicate that most of the time, the data entry operator does not even alert the women to this clause. It appears that by default, this clause is checked 'Yes'.… The result is that for these women, *Aadhaar* seems just another identity card that they have to apply for. Its unique features [such as the idea of interlinking of *Aadhaar* information with beneficiary databases] are not at all made clear, and so poor and marginalised women enrolling for *Aadhaar* do not really know what they are signing up for".[26]

> **As Bezwada Wilson, social activist who has been leading a decades-long struggle for the eradication of manual scavenging, observes, "Oppressive identities are to be cast off, not documented and kept forever. What we need is a technology that will destroy this demeaning work and finish off this identity. Instead, what this is doing is branding us forever" (Ramanathan, 2017a).**

4.2.2. Unfair exclusions in Aadhaar seeding

Evidence from the ground suggests that the *Aadhaar* seeding of beneficiary databases in welfare schemes critical to women have been plagued by numerous flaws that have led to unfair exclusions.

(a) Social Security Pensions
The National Social Assistance Programme (NSAP) provides monthly pensions to old, disabled and widowed women who do not have any other means of social security. In 2016, the state of Rajasthan introduced *Aadhaar* seeding in these pension schemes to weed our duplicate/ fake beneficiaries from the database. At the end of this process, the pensions of over 3.5 lakh beneficiaries were stopped and that of 7 lakh beneficiaries cancelled. The 7 lakh figure included 2.97 lakh pensioners declared dead

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[26] Interview carried out for this research paper on November 7, 2017.

and 1.7 lakh duplicates. Fact finding missions by *Dainik Bhaskar* revealed that over 1 lakh of the 2.97 lakh pensions had been incorrectly declared dead.

Social audits on the ground by the *Mazdoor Kisan Shakti Sangathan* found that the government's list of 'dead' or 'duplicate' pensioners contained thousands of authentic beneficiaries who had been struck off the list without explanation because they had either failed to open a bank account, enroll in *Aadhaar*, or their particulars had been entered wrongly by data entry operators in charge of updating the beneficiary database (Yadav, 2016).

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(b) Employment Guarantee

MGNREGS provides equal pay for equal work, creche facilities for women at worksites, and the guarantee that work sites will be situated within 5 km of residences of workers. As part of the transition to *Aadhaar*-enabled delivery, beneficiaries of MGNREGS are required to be authenticated against their *Aadhaar* number and register an *Aadhaar*-enabled bank account for receipt of wage payments. In 2016-17, after a massive *Aadhaar* authentication drive, the central government announced that 94 lakh fake job cards, that is approximately 8 percent of the total number of job cards, had been deleted. Data obtained by activists in May 2017, under the Right to Information Act 2005, reveal that of these deleted job cards, only 12.6% were classified as 'fake' or 'duplicate'. Over 60% of the deletions are lumped together under the category "Other reasons" (Khera, 2017b). Community organisations believe that such deletions may be attributable to failure of block level officials to trace beneficiaries during the *Aadhaar* authentication drive.[27] Another related problem that has emerged is the denial of wage payments to workers due to errors in the bank account information entered in the MGNREGS database (Sen, 2017).

> **Data obtained by activists in May 2017, under the Right to Information Act 2005, reveal that of these deleted job cards, only 12.6% were classified as 'fake' or 'duplicate'. Over 60% of the deletions are lumped together under the category "Other reasons" (Khera, 2017b).**

(c) Maternal health entitlements

In the case of *Janani Suraksha Yojana* – a scheme that provides cash incentive for institutional delivery to women from low-income households, the government has announced that benefits will be allotted only upon

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[27] From Jharkhand and Karnataka, there are reports of district officials cancelling job cards when they couldn't trace workers in order to ensure that their records would show 100% *Aadhaar* seeding. See http://www.hindustantimes.com/india-news/mgnrega-job-cards-cancelled-to-meet-aadhaar-linking-targets-jean-dreze/story-w32aXxkDI1BtXJUXX3sXWN.html

proof of *Aadhaar* enrollment. There are reports of hospitals failing to provide timely attention to pregnant women who do not produce their *Aadhaar* cards upon admission (Rethink *Aadhaar*, 2017). As Amrita Johri, activist with the *Satark Nagarik Sangathan* has highlighted, "… *with this [precondition], pregnant women will have to undergo [even more] hardship for accessing their entitlements*" (Yadav and Rao, 2017).

In a related development, government hospitals have started demanding the *Aadhaar* number to provide reproductive health care services, despite the

> **Failures of biometric machines at the last mile have raised valid questions about the appropriateness of using this particular form of digital authentication in *Aadhaar* based transactions.**

absence of any government notifications/ orders to this effect. For example, recently, a government hospital in Chandigarh reportedly denied abortion care to a patient who was not enrolled in *Aadhaar* (The New Learn, 2017).

(d) Food rations

The denial of food rations due to *Aadhaar* seeding errors/delays in the beneficiary database of the Public Distribution System (PDS) has been covered widely by the media. The PDS system is non-negotiable for the basic food security of the most marginalised women,[28] especially those from women-headed households. In Jharkhand, the state government ordered mass cancellation of ration cards not linked to *Aadhaar*. Media exposes have highlighted how this has led to starvation deaths. One report (The Wire, 2017b) claimed that Santhoshi, an eleven year-old girl from a household, whose card had been cancelled, died of starvation in October 2017. But government officials have attributed her death to malaria.[29]

In Delhi, Andhra Pradesh and Rajasthan, the quantity of food ration provided per household under the PDS is according to the number of *Aadhaar* numbers that are linked to the ration card (Khera, 2017b). In a context where household level discrimination has been documented to affect women's nutritional status, a reduction in rations can have a direct influence on women's health and wellbeing.

Failures of biometric machines at the last mile have raised valid questions about the appropriateness of using this particular form of digital authentication in *Aadhaar* based transactions.

Currently, biometric authentication of beneficiaries at the point of sale has been introduced in 35.5% of PDS shops in the country (Abraham, Bennett, Sen & Shah, 2017). In 2011-12, when the *Aadhaar* authentication process was first tested, the projection was that only one percent of beneficiaries would face biometric authentication difficulties. But in practice, the authentication failure rates have been much higher: as evidence from Andhra Pradesh[30] and Rajasthan[31] reveals.

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28 It is in acknowledgment of the criticality of access to food rations for poor, rural women that the National Food Security Act 2013 has mandated that priority ration cards be issued in the name of the eldest woman member of a household.

29 The Right to Food Campaign is planning to file a case in the Supreme Court, demanding a probe into Santoshi's death.

30 Governmental data from Andhra Pradesh indicates that in social protection programmes, 1 in 7 biometric authentication transactions fail. See http://stateofaadhaar.in/wp-content/uploads/State-of-Aadhaar-Full-Report-2016-17-IDinsight.pdf

31 In July 2017, the Mazdoor Kisan Shakti Sangathan pointed out that in Rajasthan, about 25 lakh households or 1 crore people, about 33% of the total number of households eligible for rations, were not receiving their entitlements because of authentication failures.

The mandatory linking of *Aadhaar* to welfare delivery has been seen as a 'coercive' measure (Ramanathan, 2017b) that not only compromises individual privacy,[32] but as demonstrated above, one that affects women's basic socio-economic rights in very specific, and even, disproportionate, ways. Further, the lack of accountability mechanisms, accessible avenues in the implementation design for citizen grievances and contestations to be expressed, registered and solved within reasonable time as well as public information systems, makes the current *Aadhaar* enabled service delivery system in India punishingly difficult for marginalised women. See **Box 4**.

Box 4. Lack of accountability mechanisms in Aadhaar-enabled service delivery systems

In the transition from legacy systems to *Aadhaar*-enabled service delivery, there is no institutional mechanism on the ground that marginalised women can use to raise grievances about unfair denial of welfare entitlements. As Sejal Dand, facilitation team member of the National Secretariat of the Right to Food Campaign, puts it:

"Those of us who work for women's empowerment recognise that individually and collectively, women gain power when they are able to enter into negotiations for their rightful entitlements. The problem with the new digital architecture [for welfare service delivery] is that it is completely faceless. Women do not know who is responsible in this new scheme of things. The lower level officials at the district or block level whom they could approach earlier and ask questions have now been completely absolved of any accountability. Women now do not know where to go. Also, our experience has clearly indicated that local accountability mechanisms work best when you have a public forum where it is clear who has, and who hasn't, received entitlements. For instance, Orissa has adopted this system where on the seventh of every month, *Gram Panchayats* make social welfare payments to beneficiaries in a public meeting convened for the purpose. At this meeting, it is possible to question officials. When such a public forum doesn't exist, women are powerless. This is the problem [in *Aadhaar*-enabled service delivery] that we are seeing across the board. In the MGNREGS, the muster roll [which is linked to the *Aadhaar* number and beneficiary bank account] is handled at the block level. There is no one in the *Gram Panchayat* to approach. The locus of control moves further away from women, and goes against the idea of empowerment and locally accountable governance, we have spent decades fighting for."[33]

The data that the government puts out about identity fraud and leakages being detected through *Aadhaar*-seeding of welfare schemes is not sufficient to enable any meaningful scrutiny of these claims. As Anjali Bhardwaj, co-convener of the National Campaign for People's Right to Information highlights:

"[In *Aadhaar*-enabled service delivery], even as the state is pushing ahead with deploying technology that is not tested, it is also failing to put out information which people need to hold the government accountable for welfare guarantees. On the contrary, in this new digital

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[32] The Supreme Court's verdict on whether the *Aadhaar* project, in its current form, violates the constitutional right to privacy, is awaited.
[33] Interview carried out for this research study on November 7, 2017.

framework, the government is closing down accountability related information. Take the case of the PDS. In February 2017, the Prime Minister said on the floor of the house (*Lok Sabha*) that because of technology and *Aadhaar*, the government has been able to weed out nearly 4 crore bogus ration cards as a result of which 14,000 crore INR of welfare spending has been saved, money which has gone back to the poor. We looked at all the websites of the government – the PMO site, the food ministry; there was no data to back this claim. The reason we were alarmed is that if there was a chance that any of these bogus cards included genuine beneficiaries, it would be a matter of life or death for them if they lost their rations. So we sent a RTI request to the PMO, asking for the state-wise break-up of the ration cards and the list of ration card holders who had been identified as bogus. The idea was that if this list were made available, an on-ground social audit could be conducted to correct wrongful exclusions. We never received any proper reply. The figures we got did not tally with the claim made by the Prime Minister. Later on, the government corrected the (statement of) the Parliamentary discussion… but even with this, the figures did not match. We also queried state governments, and the data they have shared does not add up (to the original/corrected figures)." [34]

Marginalised women and their groups/organisations do not have the bandwidth to challenge this entire apparatus and mount a struggle against this pervasive lack of accountability. As Jahnvi Andharia, women's rights advocate and scholar with long-standing experience of working with grassroots women's collectives in India reflected in our interview,[35] women tend to see *Aadhaar* enrolment and seeding as yet another ID or 'card' that they must obtain for having access to welfare entitlements. The time burdens inflicted by Aadhaar related difficulties, she says, are like the proverbial last straw:

"Women's collectives and social movements have been fighting for their right to health, food and work for a long time. And in each of these struggles, there is already a whole gamut of issues that they are engaging with, issues on which a lot needs to be done before some traction is obtained. *Aadhaar* related problems add to these rights-based struggles, but women's collectives simply do not have the energies to spare to open yet another front."

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34 Interview carried out for this research study on November 7, 2017.
35 Interview carried out for this research study on November 7, 2017.

4.2.3 Exacerbation of women's economic exclusion in DBTs

Direct Benefit Transfers (DBTs) have been introduced in over 316 schemes of 51 ministries in India, marking a transition from delivery of welfare services in kind or through local level cash payments to direct transfers into *Aadhaar*-enabled bank accounts.

The *Jan Dhan Yojana* – that seeks to ensure universal financial inclusion by ensuring that at least one member of every household, preferably a woman, has a zero balance bank account – may have brought the majority of Indian women into the formal banking net, but there is no evidence that women are independently managing their finances. In fact, a 2017 research study by the Women's World Banking group has revealed that only 38% of Indian women have access to a formal bank account, and most of these accounts are barely used[36] (Women's World Banking, 2017).

Banking infrastructure in rural India is underdeveloped, with hardly 27% of villages having access to a bank within 5 kms (Department of Economic Affairs, 2016). For women in particular, mobility related constraints and lack of financial autonomy act as barriers to independent banking. The increasing emphasis on digital transactions under the present circumstances, could further undermine women's financial autonomy. The National Family Health Survey 2016 also highlights that only 36.9% of rural women have access to a mobile phone. The advent of Reliance Jio does not seem to have drastically altered this situation in rural areas (Rathee, 2017).

> **In the majority of cases, therefore, with shared access to mobile phones being the norm, banking or financial transactions through the mobile are likely to be subject to male mediation and/ or surveillance. Also, without sophisticated digital capabilities, limited functional literacy, and low financial literacy, women in general and rural and urban poor women in particular, face the risk of frauds in relation to the *Aadhaar*-enabled bank payments system.**

In the majority of cases, therefore, with shared access to mobile phones being the norm, banking or financial transactions through the mobile are likely to be subject to male mediation and/ or surveillance. Also, without sophisticated digital capabilities, limited functional literacy, and low financial literacy, women in general and rural and urban poor women in particular, face the risk of frauds in relation to the *Aadhaar*-enabled bank payments system.

Many reports have flagged the high prevalence in India of cyber frauds, and despite its robustness, the *Aadhaar* linked bank payments process has still been vulnerable to fraudsters (Dey, 2017).

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[36] The National Family Health Survey 2016 observes that only 48.5% of rural Indian women reported to having a banking/savings account that they independently use. This definition of 'independent use' is not very clear, and so it may be prudent to rely on data from a study that exclusively focused on women's financial exclusion, such as that by Women's World Banking.org.

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AADHAAR-ENABLED SERVICE DELIVERY: IMPLICATIONS FOR WOMEN'S RIGHTS

SEEDING

Errors in seeding beneficiary databases

Unfair denial of entitlements
(Social security pension/ maternal health
services/ food rations/ employment
guarantees)

Lack of defined limits on seeding

Risk of unauthorised profiling by
private and public actors

ENROLLMENT

Absence of provisions for informed consent

Breach of personal data of marginalised
women

Violation of the right to privacy

Labeling of marginalised identities

AUTHENTICATION

Exclusive reliance on bio-metric verification

Delegitimization of older methods of
establishing citizen identity

High percentage of exclusion errors
(wrongful denial of claims)

JANDHAN-AADHAAR-MOBILE TRIAD

**Total substitution of services and benefits
by bank transfers**

Exacerbation of women's economic
exclusion

IT for Change 2018

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5. OUTCOME AREA 3. CITIZEN EMPOWERMENT

This section evaluates *Digital India's* strategies for economic and political empowerment.

5.1 Women's economic empowerment in Digital India

Transforming India into a *'truly global digital economy'* that promotes *'inclusive growth'* is at the heart of the *Digital India* vision of economic empowerment (Ministry of Electronics and Information Technology, 2017a). The core elements of the policy roadmap for realising this vision include:

(a) Leveraging the opportunity that digitalisation offers for rapid integration of informal sector activities into the formal economy: through universalisation of digital payments, introduction of an interconnected, digitalised tax management system for uniformalising indirect tax collection across the entire country (GST), and promotion of e-commerce opportunities amongst micro, small and medium enterprises (Sinha, 2017; Press Trust of India, 2017b).

(b) Large-scale employment generation in a job market that is being rapidly restructured through digitalisation (CNBC-TV18, 2015), through investment in en-masse skill development of the working age population, and building a supportive environment for entrepreneurial innovation (Ministry of Skill Development and Entrepreneurship, 2015).

Though the official policy document is silent on the implications of these strategies for women's economic empowerment, the popular discourse on *Digital India* has emphasised the need to "take women along" in this trajectory of digitally-enabled economic growth.

The National Policy for Skill Development and Entrepreneurship 2015 acknowledges the urgent need to promote women's labour force participation (currently, at a lowly 27%) and support the growth of women-owned enterprises (comprising 14% of registered and 9% of unregistered enterprises). Between 2015-17, 26.5 lakh women have been enskilled through the *Pradhan Manthri Kaushal Vikas Yojana*, of whom 50% are women.

This scheme focuses on providing skills training to youth, keeping in mind the workforce requirements of 25 core manufacturing sectors in the digital transition. PMKVY trainings focus on sector-specific technical skills, soft skills, financial and digital literacy (Ministry of Skill Development and Entrepreneurship, 2017).

Further, the government has launched an e-marketplace for farmers (National Agriculture Market portal) and a web marketing platform for women entrepreneurs *(Mahila e-Haat)*. These initiatives are discussed in greater detail in Section 5.1.2 below. Access to institutional credit has also been acknowledged by the government as an essential intervention for bolstering women's economic participation in the emerging digital economy. In fact, the Prime Minister and members of the Cabinet have repeatedly emphasised the need to view Stand up India[37] and MUDRA[38] schemes that provide loans to women entrepreneurs as being interconnected to the Digital India vision.

Though the official policy document is silent on the implications of these strategies for women's economic empowerment, the popular discourse on Digital India has emphasised the need to "take women along" in this trajectory of digitally-enabled economic growth.

The following sections take stock of these measures, in terms of their implications for women's empowerment.

5.1.1 The downsides of 'formalisation by digital fiat'

The architects of Digital India have viewed digitalisation as a strategy to enforce rapid formalisation of the economy. Through a unique social production model, that has relied on the pro-bono effort of technical experts from leading software product companies in India, a set of open digital APIs that can support presenceless, paperless and cashless transactions has been developed – 'India Stack'. The voluntary initiative behind the development of this digital infrastructure is iSPIRT/ Indian Software Product Industry and Roundtable, whose vision is to "*develop digital public goods without public money*" to "*save India from digital colonialisation*", by reducing dependency on digital companies for the global South for essential digital infrastructure (ProductNation, 2017).

The architects of Digital India have viewed digitalisation as a strategy to enforce rapid formalisation of the economy.

This digital architecture is intended to serve as the backbone for the development of payment-enabled apps, and it includes the following (Pereira, 2016):
a. e-Know Your Customer (safe deposit digital locker for issue, storage and use of customer documents; *Aadhaar*-enabled digital identity authentication),
b. e-Sign (digital signature acceptable under the laws),

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37 *Stand up India* seeks to make available loans between 1 lakh and 1 crore to at least 250000 women, SC and ST individuals**.**
38 The MUDRA scheme seeks to refinance microlending to small businesses, for loans between 50,000 INR to 10 lakh. The scheme guidelinesspecify that preferential treatment should be provided to women.

c. United Payment Interface (for financial transactions) and

d. privacy-protected data sharing within the stack of API (listed above).

There are plans to add 'a consent architecture' to India Stack that will enable users to *"digitally share their data with service providers in exchange for easier access to credit, insurance and other services"*. The intent is to smoothen user data sharing with banks and financial institutions so that credit evaluation in SME and agricultural sector lending, and risk assessments in insurance can be completed at a much faster pace (Factordaily.com, 2017).

The hope is that this new digital infrastructure can unlock the cashless payments business opportunity, that is estimated at $ 600 billion. In the words of Nandan Nilekani:

> **But considering that the government is yet to constitute a digital payments regulator by following up on the recommendations of the Watal Committee, there are high risks, in this push for digital payments, of user data privacy and security being compromised and vulnerable groups being subject to predatory lending practices that rely on discriminatory data mining (Acharya, 2017).**

"Such a use of digital footprints will bring millions of consumers and small businesses (who are in the informal sector) to join the formal economy to avail of affordable and reliable credit...And as data becomes the new currency, financial institutions will be willing to forego transaction fees to get rich digital information on their customers" (Nilekani, 2016, cited in Ramanathan, 2016).

But considering that the government is yet to constitute a digital payments regulator by following up on the recommendations of the Watal Committee, there are high risks, in this push for digital payments, of user data privacy and security being compromised and vulnerable groups being subject to predatory lending practices that rely on discriminatory data mining (Acharya, 2017).

The government has short-shrifted these concerns, with its relentless push for transitioning to a cashless economy of digital payments, as exemplified by demonetisation and the introduction of the digitalised Goods and Services Tax Regime.

The Economic Survey 2016-17 has called attention to how demonetisation and the forced switch to a cashless economy stressed the informal sector, and led to labour distress.[39] Needless to add, women bore the brunt of the impact, as 95% of women in paid work in India are in the informal sector. There are no large-scale studies documenting the pernicious impacts of demonetisation on the livelihoods of women in the informal sector. However, media reports and testimonies from grassroots organisations reveal the proverbial tip of the iceberg. There are numerous accounts of marginal women farmers being forced into penury and indebtedness (Agarwal, 2017). There are reports of rural households cutting down their food expenditure post-demonetisation,[40] and shelters for the homeless remaining unoccupied due to outmigration triggered by the loss of jobs in

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[39] The evidence that is used to buffer this claim is the spike in demand for work under NREGS in the post- demonetisation period, especially in less developed states.
[40] Key informant interview with Jahnvi Andharia, November 6 2017

the urban informal sector.[41]

Women street vendors were one of the key constituencies that were adversely affected. As Dharmendra Kumar, founder of *Jan Pahel*, an NGO that works with urban street vendors in New Delhi, shared in an interview:

"Women street vendors were especially affected by demonetisation. These women often put away some cash they earn as emergency savings, and this is often hidden from male family members and it is a woman's own private reserve. When demonetisation happened, this cash had to be exchanged. This was a double whammy. If they had to exchange this cash without other family members coming to know of this, they had to shut shop for a day to go and queue up in the bank. But if they did not want to leave their business and opted to send someone else from the house to deposit the notes, this meant a loss of control. Everyone would know about their savings. Also, though most women vendors have mobile phones, they are not very digitally savvy. Many of them could not adapt to the new digital payment methods and in cash-starved times, this meant loss of customers. And once you lose customers, they don't come back."

Similarly, the experiences of women producers' companies and MSMEs suggest that the new GST regime adds to their tax burdens and threatens their viability. For example, the Umang Producers' Company in Uttarakhand that has over 1500 women farmers as shareholders, is engaged in business in three verticals: fruit preserves, wholegrain foods, and hand-knit items. The company faces an increase in its indirect taxes burden post-GST. Further, the advance tax requirement in GST (as taxes are paid at the time orders for products are received) may even make the business unsustainable given that the organisation works with very low amounts of working capital.[42]

5.1.2. Women's exclusion from the digitally restructured job market

The popular discourse on Digital India reveals extreme optimism about the potential of digitalisation to open up new employment opportunities. In fact, the Minister of Electronics and Information Technology has called attention to how the emerging digital economy will open up 50-70 lakh jobs for Indian youth, by 2020, and heralded this as a welcome sign (Press Trust of India, 2017c). Macroeconomic analyses however suggest the need for caution in anticipating the trends. According to the Economic Survey 2016-17, unemployment and casualisation of employment is on the rise (Gangopadhyay and Kapur, 2017).

It is well acknowledged that the transition to a digital economy is restructuring the job market. Acemoglu and Autor offer a framework to analyse the impact of digital automation on employment patterns. They suggest that all work can be divided into a two-by-two matrix: cognitive versus manual, and routine versus non routine. According to them, digital automation will substitute labour in routine tasks, whether cognitive or manual. With technological advancements therefore, cognitive and manual jobs that have a high proportion of routine, codifiable tasks are likely to be automated/ computerised.

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41 Key information interview with Anjali Bhardwaj, November 6 2017
42 Note on effects of demonetisation prepared by the Umang Producers' Cooperative in July 2017

The type of jobs that are getting created in the digital economy are cognitive jobs that require specialised skills to perform non-routine tasks. In India, even as task intensity of non routine cognitive tasks has increased, unlike US and Europe, routine cognitive task content has still not declined.

Labour market segmentation based on caste and gender means that lower end, routine jobs continue to be performed by women and the lower castes who have very limited access to higher education. Data from Census of India 2011 suggests that *"just over four per cent of the Scheduled Castes (SCs) are graduates or above, while for the Scheduled Tribes (STs), it is below three per cent, and lower still for women"* (Rukmini, 2015). As per NSS data, despite a 27% share in the population, Scheduled Castes have contributed only 15.7% to the total increase in non-routine, cognitive analytical jobs, thus lagging behind in the new economy (Vashisht, 2016) Vast differences in the upward mobility prospects of urban vs rural residents and upper caste Hindus vs SCs and STs and simultaneously large prospects for down-ward mobility, larger among rural residents and among SCs and STs, makes for a precarious existence for many (Iversen, Krishna & Sen, 2017).

Women are clearly falling behind in the economy. Only 27% of Indian women are in the workforce, a figure that has been declining over time, and over 90% of them are in unskilled jobs in the informal sector, jobs that will shrink with increasing digitalisation (Das, Jain-Chandra, Kochhar & Kumar, 2015; Saha, 2017). Only 10% of the students in the advanced technological institutes that prepare students for the cognitive jobs opening up in STEM fields are women ("The glaring lack of women", 2017). As Sabina Dewan, from Just Jobs, a multi-country research network, explained during our interview:

> **Labour market segmentation based on caste and gender means that lower end, routine jobs continue to be performed by women and the lower castes who have very limited access to higher education.**

"Oftentimes, in official estimates about digitalisation opening up new jobs, what is never clear is the net impact of the 'digital' on jobs, in terms of quality and quantity. First, let us look at the issue of quality. E-commerce platforms such as Alibaba may open up thousands of new jobs, especially in logistics and warehousing. But do these jobs address the issue of economic precarity? This needs to be answered. Even if we take the view that any job opening that emerges is important, and the economy needs more jobs on the whole, there is the important question of net job growth. For every new job that digitalisation has opened up, how many are getting taken away? This becomes especially important when we are studying impacts on women's employment. We may not realise what job opportunities are being taken away, as many women are in the informal sector and may not be easily visible."

The *Pradhan Manthri Kaushal Vikas Yojana* that aims to *"skill India on a large scale with high speed and standards"*, claims to have successfully trained 26.5 lakh people in skills of their choice, of whom 50% are women (Ministry of Skill Development and Entrepreneurship, 2017). An evaluation of the scheme

in 2017 by a government-appointed committee found that the overemphasis on training targets has compromised quality of training, assessment and certification, leaving the majority of trainees bereft of placements.

The committee added that its consultations with programme stakeholders revealed that for different sets of skills-training, targets were allocated *"without regard to any sectoral requirement. Everybody was chasing numbers without providing employment to the youth or meeting sectoral industry needs"* (Srivas, 2017). Even a senior bureaucrat from the Ministry of Electronics and Information Technology observed in an interview with us that the short term three-month programmes under the scheme may not lead to effective high-end skilling. Sabina Dewan,[43] from Just Jobs, points to how the short term approach with regard to skilling youth is myopic:

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"When faced with huge demographic pressure, policymakers do not have the luxury of addressing the employability and enskillment programme by putting their resources completely in school education overhaul. They are forced to invest in short-term enskillment of the youth entering the job market without the skills that are sought by prospective employers. Oftentimes, due to resource crunch and time pressure, such efforts end up being superficial. And more worryingly, low-end skilling, when it leads to placements, puts people in jobs that are a dead-end in terms of career growth. And then, you find high turnover. People are not getting jobs, and they don't want the jobs that they get at the end of low-end skilling."

In the absence of gender disaggregated data with regard to the outcomes of such schemes – that is, data on how many women were able to find gainful employment, it is hard to judge if any fundamental shift towards better choices for women has indeed occurred.

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5.1.3. Platform marketplaces without digital enterprise readiness

The Ministry of Women and Child Development has launched an online digital platform where women entrepreneurs can market their products. By waiving product listing fees/commission, *Mahila e-Haat* lowers entry barriers to participation. To list their products on the portal, any interested woman entrepreneur or women-owned enterprise/cooperative has only to submit

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43   Interview with senior bureaucrat from Ministry of Electronics and Information Technology, 28 November 2017.

an online/offline application to the Ministry. Applications are processed by an in-house Selection Committee and selected products are put up on display, along with contact details of the seller, to enable prospective buyers to directly reach out to them. At present, the portal does not facilitate direct online transactions between buyers and sellers. It only serves a marketing function. An audit of the website revealed that 415 sellers are registered on the platform as on November 2017. About 38% hail from Tier 2 cities; the rest are from Tier 1 cities and metropolitan centres. Though the *Mahila e-Haat* attempts to address a niche that has previously been neglected, the current reach of the platform is very limited and calls for urgent efforts to popularise it for much wider use.

Between April 2016 (when the Stand Up India scheme was first launched), to September 2017, less than 25% of the 1.3 lakh bank branches in the country have provided loans to women, and only 6% have provided loans to SC/ST individuals (The Wire, 2017c).

In order to ensure that women-owned MSMEs are able to leverage e-commerce opportunities, initiatives like the *e-Haat* can potentially provide the much needed impetus. But it is equally important to enhance the competitiveness of women's enterprises in the digital platform marketplace in general. Studies reveal that less than 5% of SMEs in India have a web presence (Google and FICCI as cited in Khan, 2013). To take advantage of new digital markets, it may not be enough to list one's products on a single web platform provided by the government. It would be critical to back this up through organisational websites, strategic marketing through social media, creative use of online advertisements etc. This presupposes affordable access to the Internet and a wider regulatory ecosystem that supports and promotes women entrepreneurs' digital presence and participation. Further, taking advantage of the opportunities for business expansion that are opened up by new market linkages presupposes easy access to institutional credit. Stand up India and MUDRA schemes recognise this. However, their implementation needs to be improved.

Between April 2016 (when the Stand Up India scheme was first launched), to September 2017, less than 25% of the 1.3 lakh bank branches in the country have provided loans to women, and only 6% have provided loans to SC/ST individuals (The Wire, 2017c). This is despite the government guidelines mandating every bank branch to give two loans under this scheme: one to a SC/ ST individual and another to a woman. Whilst it is true that the MUDRA scheme may have opened up access to credit for 4 crore borrowers operating small businesses (70% of whom are women) (Ministry of Finance, 2017), it has, however, failed to expand the micro/small loan portfolio of the banking sector (Iyer, 2017). Similarly, the e-National Agricultural Market portal serves as an electronic trading platform where farmers can directly approach buyers, without having to go through traditional middlemen. Farmers are now free to sell their produce to buyers in any location in the country, without having to go through intermediaries with trading licenses

in the *mandi* under the concerned APMC jurisdiction (Damodaran, 2016). By enabling the farmers to directly access the quotes from different buyers for their produce, the platform seeks to enhance transparency in agricultural trading and help farmers obtain better prices for their produce. 585 registered *mandis*/agricultural markets have been integrated onto the e-NAM portal.

However, state agricultural departments have had a tough time convincing stakeholders to move to electronic trading (Nirmal, 2017). Even farmers are refusing to make the transition, as they fear that breaking off their relationship with commission agents may expose them to greater risk in the long term. As observed by a research study on Karnataka's Unified Marketing Platform, an e-trading platform initiated by the state government on which the e-NAM is modelled: *".....the farmers' deeply entrenched relationship with the commission agent allowed them access to credit and it was logical that they sold back to jaggery in Mandya, farmers who sold to traders directly outside the mandi continued doing so [without using the e-trading platform] and said that they prefer direct sales since it saves them transportation costs and time"* (Aggarwal et. al. 2017).

Considering that the bulk of women farmers are marginal and small farmers who oftentimes do not own the lands that they cultivate, it is important to map the extent to which e-NAM has made a difference to their direct participation in agricultural markets. To begin such an exercise, we require gender-disaggregated data about the number of users of the Farmers' Portal or the number of registered farmers on e-NAM.

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To sum up, the *Mahila e-Haat* and e-NAM are valuable efforts to create platform marketplaces that are provisioned as digital public goods. They ensure that steep commission rates/brokerage fees on ecommerce platforms do not pose a barrier to the participation of women in emerging digital markets. But their effectiveness is limited in the current situation, wherein institutional support systems to address structural factors that lead to women's exclusion from markets do not exist.

5.2. Women's political empowerment in Digital India

The 'Information for all' programmatic pillar of *Digital India* explicitly acknowledges the facilitation of open and easy access to public information through the Open Data portal, and pro-active engagement with citizens through web and social media platforms, as its key strategic priorities. This vision of promoting public-political participation is gender-neutral, and it does not focus on addressing the specific issues and challenges that women face when engaging with governance systems, or in being heard in the public sphere. Nevertheless, it is important to take stock of the implications of these initiatives for women's political empowerment.

5.2.1. Public information and open data systems

The role of citizen-centric data processes for democratic accountability has been well documented. The design of data systems from the standpoint of transparency and accountability must account for citizen rights to be informed and to seek answers from government. Women's marginalisation from public information processes and lack of access to digital assets and literacy are significant barriers for their full citizenship as governance goes digital. Open data refers to the process of *"making data available in non-proprietary formats [online] under licenses that permit unrestricted re-use"* (Open Knowledge Foundation, 2006 as cited in Davies, 2012). Government datasets, if released by concerned ministries, departments, and agencies, in this format, are termed "Open Government Data" (Davies, 2012). The availability of governance-related information and data in open, machine-readable formats that may be re-combined and scrutinised through visualisation techniques is a precondition for democratising women's rights as citizens. Civil society organisations can garner the evidence for public awareness and mobilise women on critical public issues using open data. Social audits for schemes like MGNREGS rely on public data sets, with significant implications for women's economic rights.

Open data initiatives received a major push in India with the notification of the National Data Sharing and Accessibility Policy (NDSAP) in March 2012 ("Open Data", n.d.). This policy seeks to facilitate wider accessibility and usage of all data and information created, generated, collected and archived using public funds, through their online publication in open, machine-readable formats. To facilitate this, the data.gov.in web portal has been set up as an online space for different ministries and departments to publish different *"data-sets, documents, services, tools and applications"* for public use. The NDSAP set a time limit of a year for all existing data sets held by ministries, departments and other governmental organisations, to be put up on the web portal. It also mandated quarterly updation of datasets. The policy recognises that informational

transparency for government accountability is not just about publishing information related to the activities of an agency, but also *"releasing the datasets that informed and got produced by those activities"* (Chattapadhyay, 2013).

There has also been an effort to integrate the NDSAP with the proactive disclosure provisions of the Right to Information Act 2005. In April 2013, the Department of Personnel and Training issued an office memo mandating all government agencies to declare on their website the the detailed list of all datasets managed by the agency concerned, with a mention of which of them are available publicly and which not; list of all multimedia information held by the agency; and details of all RTI requests received and [44] responses given out (Chattapadhyay, 2013).

> **Unless data is maintained in compliance with official standards, democratic accountability will become a casualty.**

Unfortunately, compliance with the NDSAP provisions has been extremely poor. To start with, there is no public inventory of data sets maintained by government departments. Further, as a recent analysis of the data.gov.in observed, *"datasets are not available. Moreover, the available ones, that is, uploaded datasets, are found to be outdated, duplicated, incomplete, lacking in semantic interoperability, and inadequately referenced. There is an absence of good quality (or any) metadata associated with OGD. More often than not, researchers are unable to reach out for effective troubleshooting* (Agarwal, 2016)."

The absence of system readiness to provide quality public data is a serious accountability concern. As governance systems become datafied, numbers tend to invariably travel upwards for bureaucratic and political decisions. Unless data is maintained in compliance with official standards, democratic accountability will become a casualty. As discussed elsewhere in this paper, women's organisations have not been able to establish the veracity of PDS data even with repeated appeals through the RTI.

The absence of a dedicated strategy for making available gender-disaggregated data across different domains is a serious lacuna in the open government data system. In fact, the Ministry of Women and Child Development has not even put up a single dataset on the data.gov.in web portal. Though there are some data sets uploaded by other departments (such as gender-disaggregated data on crime, women's health, and Census statistics), this constitutes a miniscule 1.17% of the total number of data sets that are available on the data.gov.in portal.

In addition to the absence of robust and gender disaggregated data, some other problems include:

(a) Lack of liability for accidental release of sensitive, personal information
The Open Data License that has been adopted by the Government of India holds Open Data users liable for re-use of sensitive personal information accidentally released

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44 Only details of information requests. Applicants' personal information is not to be published.

by government departments/agencies (Kodali, 2017). Ironically, government departments and agencies are neither mandated to institute personal data protection safeguards in the publication of data-sets; nor are they penalised for accidental breaches of privacy (ibid).

The release of disaggregated datasets without de-identification compromises the privacy of women. For instance, in 2012, as part of its Open Data efforts, the state government of Karnataka published contact numbers, income, and land ownership details of single women from across the state when it released data sets from the caste census. This met with wide criticism, as such sensitive information is liable to be misused by vested interests in the community for land-grab or targeted violence. In the end, these data-sets were unpublished after the High Court intervened (Gowda, 2015). More recently, over 210 government websites have come under the scanner for releasing names, addresses and *Aadhaar* numbers of citizens, in a major breach of privacy (Press Trust of India, 2017d). Information systems, while adhering to the highest standards of public transparency need to ensure women's privacy (Vaz, 2012).

> **The release of disaggregated datasets without de-identification compromises the privacy of women.**

(b) Lack of support for community monitoring and audits

The design of data systems for monitoring of most welfare schemes (except very few, like the MIS of MGNREGS designed with civil society participation) has completely focused on building centralised management information systems that are meant for top-down control. Civil society groups and orders by Chief Information Commissioners on various occasions, have highlighted how data systems in the country are not geared to serve as tools for community accountability. For example, in 2017, the Maharashtra State Information Commission observed that *".… there is hardly any transparency and accountability in the implementation of various welfare schemes by the government. [sic] Commission views this as lapse on the part of public authorities with serious concern. It is sad that after elapse of more than 11 years since RTI Act has come into concern. It is sad that after elapse of more than 11 years since RTI Act has come into force, Public Authorities by and large show lackadaisical attitude towards proactive disclosure".*[45]

> **Most data systems continue to focus on remote, centralised monitoring of government schemes and service delivery, completely ignoring accountability mechanisms such as social audits, community monitoring systems in health extension and nutrition services at anganwadis etc.**

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[45] Maharashtra State Information Commission Order No. MuMaAA/ CR No 445/ Com No. 177/17/02, dated 25.03.2017

Even in the MGNREGS, research scholars have noted with dismay how the digitalised management information system intended to serve as a tool for enhanced accountability has ended up as an instrument that undercuts it (Aggarwal, 2017). This is particularly worrisome in a scheme that is critical for rural women's livelihood security. In 2016-17, the Union government tweaked the features of the MIS, in an attempt to push major changes to scheme implementation through a technical route, in flagrant violation of the provisions of the National Rural Employment Guarantee Act. As research scholar Ankita Aggarwal (2017) has flagged:

"In December 2016, the ministry prevented allocation of work to households whose photographs had not been uploaded on their electronic job cards. It also prevented the MIS from recording more than a hundred days of demand for work for a household. This move….violates the act which allows households to demand work for as many days as they wish. In February 2017, the ministry took away the option of reopening schemes in the MIS from the state-level MIS login… (S)chemes are often required to be reopened in the MIS to complete wage or material payments in them".

5.2.2 Online citizen engagement

(a) MyGov: all talk, no action
The centrepiece of the *Digital India* strategy for online citizen engagement 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"*.[46] This portal was launched in July 2014 and it hosts open discussions and opinion polls on policy proposals, competitions to promote civic-mindedness, and announcements about specific volunteering activities.

According to official statistics, there are currently over 1.78 million users of the portal, and over 10,000 posts per week.[47] To sign up, a user has to provide her full name, date of birth, gender, email id and mobile phone number. On the front-end, however, gender or age-disaggregated data about portal users has not been provided. Till date, 649 discussions have been hosted on MyGov, by 36 Ministries. The overwhelming number of discussion threads (over 330) pertain to Smart Cities proposals from different cities. A simple content analysis for this paper revealed that only 60 discussion threads out of the remaining 319 threads could be classified as public consultations for Draft Bills, proposed changes to policy frameworks, feedback on programme/scheme design, or inputs to budget preparation. The rest pertained to freewheeling discussions on a range of topics such as memories of Republic Day, girl child education, topics for *Mann Ki Baat*, child health, smart farming and so on.

The Ministry of Women and Child Development has hosted only five discussion threads. Of this, two may be classified as policy consultations: one pertaining to the Draft Trafficking of Persons (Prevention, Protection and Rehabilitation) Bill, and the other on

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46 https://www.mygov.in/overview/
47 https://www.mygov.in/overview/

the Draft National Policy on Women. Two others pertain to general discussions on the 'social and economic development of women and creating awareness among rural people' and the 'importance of health screening and health education at *anganwadis* (in the context of the *Rashtriya Bal Swasthya Karyakram* in the Union Territory of Dadra and Nagar Haveli)'. The fifth discussion thread appears to have been classified incorrectly at the back-end as a discussion thread pertaining to women: as it is about the context and challenges of civil services in India.

As Table 1 reveals, participation in the discussion threads of the Ministry is very limited. The number of users participating in these discussions is very low, considering that there are 1.78 million users on the portal. Also, the total number of posts on these discussion threads spanning months is a miniscule number when compared against the weekly average of 10,000 posts.

Table 1. Number of posts and number of registered users on the discussion threads of the Ministry of Women and Child Development, on the MyGov portal

Discussion theme	Total no. of posts	No. of users who participated	Discussion start date	Discussion end date
Inviting Comments on the Draft Trafficking Of Persons (Prevention, Protection and Rehabilitation) Bill, 2016	286	220	1st June 2016	30th June 2016
Inviting Comments on the Draft National Policy for Women 2016	703	474	1st May 2016	20th June 2016
Social and Economical Development of Women and Creating Awareness among Rural People	260	177	1st Aug 2015	1st Jan 2016
Share your views on Rashtriya Bal Swasthya Karyakram in the UT of Dadra and Nagar Haveli	108	71	1st May 2015	31st March 2016

Source: content analysis by IT for Change

Apart from these discussion threads, the Ministry of Women and Child Development has put up eight challenges for the Smart India Hackathon 2018.[48] This includes calls for prototype development of mobile apps (e.g. the National Creche Portal/App to monitor the Rajiv Gandhi National Crèche Scheme, and a mobile app to complement an informational portal on government schemes for women that the Ministry is planning to set up), and design of web platforms (e.g. a citizen-to-citizen crowdsourcing platform to support the finance and human resource needs of women's empowerment initiatives).

In a context with a high gender digital divide, women's access to a platform such as MyGov.in is limited. As has been pointed out, such efforts can be meaningful only if integrated with a larger process of institutionalised public consultation that also deploys offline strategies to reach out to vulnerable and marginalised women, and other socio-economically disadvantaged groups, along the lines prescribed by the Pre-Legislative

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48   A digital product development competition.

Consultative Policy 2014.

But even if we were to focus on evaluating the impact of the platform on only those citizens who are able to participate online, there is a key shortcoming: there is no process for collating comments/feedback received and reporting back to users with a discussion summary (Sabhikhi, 2016). In this context, though MyGov.in may be seen *"as a step in the right direction"*, there is certainly a long road to travel before its vision of contributing in the journey *"towards nation building and towards attaining 'Surajya"* (Sabhikhi, 2016) can be realised.

Finally, the government has announced its intentions to identify policy priorities in 19 key areas through 'sentiment analysis' of discussions on the platform. Decision making that relies on such a thin and skewed base risks completely ignoring the needs and priorities of marginalised women who are off the connectivity grid, and reinforcing existing exclusions in policy and programming.

As has been pointed out, such efforts can be meaningful only if integrated with a larger process of institutionalised public consultation that also deploys offline strategies to reach out to vulnerable and marginalised women, and other socio-economically disadvantaged groups, along the lines prescribed by the Pre-Legislative Consultative Policy 2014.

(b) Social media campaigns: Fleeting attempts to build a counter-discourse
The use of private social media platforms such as Facebook and Twitter is gaining currency among Ministers and government officials. In fact, the Ministry of Women and Child Development has organised Q& A sessions on Facebook between the Minister and members of the public, and launched social media campaigns such as:

(i) # IamThatWoman, to highlight stories of women standing 'by' and 'for' women in order to challenge stereotypes of 'a woman being another woman's worst enemy'.

(ii) #100WomenInitiative contest to select 100 women achievers who have contributed to community and nation building across the country.

(iii) #WeareEqual targeted at creating awareness about gender discrimination.

#100women Initiative

#WeAreEqual

Between October-November 2017, 3220 tweets were posted through the Ministry's official handle, which currently has 871 followers on Twitter. This is an indicator that the audience for these campaigns is rather limited. Nevertheless, they are important interventions to build a counter-discourse on gender norms and women's rights in the public sphere where a culture of sexism and misogyny prevails. However, in a country with multiple public spheres, with limited avenues for women's public participation, at least till connectivity becomes a reality for the majority, the Ministry will need to study the efficacy of its digital strategies, and also focus on structural measures to address discrimination in the long run.

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6. CONCLUSIONS

Digital India is not only an official programme of the government of India; it is a bigger narrative that heralds ideas of progress, opportunity and nation building (Gurumurthy, Chami and Thomas 2016). In popular discourse constructed by the political elite, it assumes a fuzzy and indeterminate form, serving as a shorthand in policy and political rhetoric for social, economic and political transformation through technology.

The programme has been promoted by the current political establishment as a hallmark of a certain kind of policy approach to "M-power" people (First Post, 2013) through what has come to be known as the JAM trinity (Krishnan, 2015). It is used as a persuasive idiom intended to evoke a strong sentiment of corruption free and transparent governance. Simultaneously, *Digital India* also straddles a range of economic tropes suggestive of a globalising India and its aspirations, including, e-commerce, digital payments, fintech and more ("Payments Form The Core",n.d.).

A concrete vision or commitment to gender equality and women's empowerment is not articulated in official documents of *Digital India*. However, 'women' feature in the *Digital India* rhetoric routinely; sometimes as the treasured subjects of development, daughters who should be celebrated; and at other times as the entrepreneurs and volunteers of humble origins leading *Digital India* (The Pioneer 2017).

The recurrent theme of *"entrepreneurial femininity"* has gained wide currency in relation to *Digital India*. It is also assimilated into business-speak. Corporate players have joined in – for instance, with Master Card-NDTV's Cashless bano India campaign in the post-demonetisation phase heralding women to be the logical purveyors of *Digital India* (NDTV, 2017) or Google India's Internet *Saathi* digital literacy initiative for rural women, partnering with state governments to catapult women and their enterprises through use of modern technologies. This dominant rhetoric, while pushing for 'digital by default' in economic and social policies, largely ignores and even undermines marginalised women's rights to life, livelihood, privacy and dignity. Consequently, in the popular discourse on *Digital India*, *"...the figure of the subaltern woman who has managed to "lean in" as a contributor in the digital economy coexists with an uneasy absence of other women, women who stand invisibilised in struggles and contestations about economy and development"* (Gurumurthy, Chami and Thomas 2016).

This paper has focused on the official programmatic narrative and its constituent elements, although it does acknowledge the vast discursive terrain that the notion of *Digital India* has come to occupy. The conclusions from the analyses presented in the previous sections are discussed below:

6.1 Oversimplified narrative of gender, technology and development

Digital India aspires to unlock the *"digital revolution for women's empowerment"* (Shankar Prasad, cited in Indian Express 2017) through an oversimplified narrative of gender, technology and development that promotes a neo-liberal, highly individualised vision of empowerment. The key programmatic strands of *Digital India* – social welfare delivery, economic growth and citizen participation – fail to acknowledge the fact that digital dividends are contingent on *"analog interventions"*, that call for public investment, enabling regulation and institutional responses so that the emerging techno-paradigm does not reproduce exclusion and discrimination (World Bank, 2016). Its lack in terms of a clear gender equality vision and gender budget signal a missed opportunity for expanding women's strategic life choices through a digitally-mediated restructuring of social, economic and political domains.

While there is an attempt to focus on women's inclusion through discrete strategies in digital literacy, m-information services, e-learning and knowledge portals, crisis support for GBV, connecting SMEs to digital marketplaces, and social media-based citizen outreach, a clear goal of gender transformative change could have guided dynamically emergent strategies in the rapidly evolving digital canvas, allowing them to be evaluated for their outcomes. In the absence of such a signpost, these initiatives remain pilots and one-off experiments that fail to translate into sustained, scaled-up institutional interventions to make the digital productively disruptive for women's citizenship.

6.2. Proactive policy – need of the hour

The world of Information and Communication Technologies has transmutated. In the present context, digital intelligence, based on data aggregation and analysis, is key. The shifts in governance towards datafied governance, discussed in this paper, suggest a new trajectory for the future of public administration and democracy. Not only does digital intelligence have political significance, it is also the new driver of the global economy. The emerging digital context therefore needs to be understood for its myriad implications for women's rights.

In its landmark judgment of August 2017 upholding the constitutional right to privacy, the Supreme Court made a causal connect *"linking the three aspects of privacy (bodily integrity, informational privacy, and the privacy of choice) ... with the preamble of the Constitution, which guarantees democracy, dignity, and fraternity"*. It also went on to affirm the need to *"protect the privacy entitlements of women grounded in the identity of gender and liberty"*. In the context of *Digital India*, the spirit of the judgment can be realised only by putting in place a robust personal data protection law and a privacy framework that delimits the scope of the *Aadhaar* project. This is an area where urgent intervention is required.

Proactive legal and policy response in traditional areas like telecommunications, free speech, gender-based violence, etc., and new areas such as ecommerce, digital public goods, data and algorithmic governance, cyberfrauds, etc., is vital, and incremental policy approaches may not be appropriate. For instance, changes to the IT Act, as discussed, are not adequate to address sexist speech online or all forms of violence against women in technologically-mediated contexts. While the MWCD has been keen to tackle online VAW, the political process around this is yet to gather momentum.

Similarly, without regulatory frameworks for managing the highly monopolistic market power of the big digital players in the economy and enabling policy to bring women in margins into the mainstream digital economy, evocative rhetoric on women's online enterprises may amount to nothing more than empty assertions. The firm stance that India adopted at MC11 about it being too premature to begin any discussion on e-commerce at the WTO is commendable, as it reflects a vigilance about not entering into any trade policy negotiations that might cripple the government's right to regulate domestic e-commerce markets (James, 2017). New developments, such as fintech business models that focus on tapping into unregulated microlending markets to service poor women who cannot access institutional credit, point to the need for dynamism in knowing the unfolding terrain.

As per the political and regulatory environment sub-index of the World Economic Forum's Networked Readiness Index, India ranks 78th out of 139 countries which means

means that the country's score card on legal and policy preparedness to meet a post-industrial, digital future is not up to the mark. The aspiration of *Digital India* vis-a-vis economic prosperity and growth will need to be built through a bold and innovative path to chart out the idea of gender justice and equality. Retrofitting the welfare and developmental agenda on top of neo-liberal ambitions is bound to reinforce and deepen inequalities with serious gender related consequences.

6.3. Gender-agnostic, technicalised vision of connectivity and access

The *Digital India* programme, with its socially-agnostic approach, fails to account for connectivity as a gendered experience. The Telecom Regulatory Authority of India (TRAI) refers to the Internet as an *"experience good"* (TRAI, 2016) whose functionality and utility manifests only upon consumption or use. A *Digital India* where women matter cannot count on the market paradigm to create experiences and meanings about women's empowerment and gender justice. In the first place, gender based statistics on Internet and mobile diffusion for India do not indicate reason for free market optimism.

There is an unmistakable gender gap in access, which maps onto existing divides in education, employment and income between women and men. The limited studies that are available on patterns of use of the Internet reveal that marginalised women are not able to effectively use the Internet to expand their strategic life choices through accessing new information, forging networks of support or taking advantage of new income generation opportunities. Women's use of the Internet is viewed as a threat to prevailing gender cultural norms and hence, their access is restricted and their online interactions policed. The normalisation of sexism and misogyny in the online public sphere further cripples women's participation on the Internet.

Also, the assumption that market-led connectivity can automatically bring digital dividends to all women is problematic. The market will not invest in bringing connectivity and content services to populations whose purchasing power is limited. Currently, the government has opted to set up public access points through a public private partnership model, under the Common Service Centres scheme. The extent to which the CSCs have contributed to the creation of women-friendly access spaces at the community level is not clear, and this needs to be assessed. There are also concerns that public access spaces set up under a PPP model may not be able to effectively balance financial sustainability with social inclusion considerations.

Further, building women's digital capabilities within the framework of empowerment and equality of opportunity implies critical education so that they can develop new sensibilities around citizenship and participation. Mass digital literacy programmes do

not recognise digital fluency to be a moving target, and are stuck in an anachronistic definition of digital skills. The *Mahila Shakti Kendras* – as resource centres – can become spaces for transformative change, making way for a digital literacy that is linked to women's practical and strategic gender needs,[49] if designed for delivering rights-based connectivity.

6.4. From frying pan to fire – the digital route to exclusion

In welfare delivery, the mantra of *"Minimum Government, Maximum Governance"* - ostensibly for greater convenience of the citizen - has paradoxically caused much more than mere inconvenience for the most marginalised women. The shift to a highly centralised, digitally-enabled welfare service delivery system is based on a view that technology-mediated processes are infallible, and therefore, an effective replacement for human systems deemed unreliable. Technological standardisation, it is believed, is a solution for vagaries of human discretion. However, unfair denial of entitlements and indeterminable accountability pose a serious threat to the reliability of digital systems in the grassroots. Women must negotiate a host of new intermediaries – data entry operators, common service centre entrepreneurs, banking correspondents, and new practices – such as biometric authentication and compulsory *Aadhaar* linking of bank accounts.

Empirical evidence suggests hardships and a high risk of disenfranchisement for marginalised women under these circumstances. Yet, they have no facilitative public information access nor institutional mechanisms for answerability. The vision of a *"presenceless"* government which supposedly eliminates possibilities for corrupt interface and touted as the idealised goal of *Digital India*, seems to push women back in their struggles for local government accountability. Navigating many layers of techno-institutional unfamiliarity in the new service delivery architecture to confront an 'absent' government is extremely difficult, if not impossible, for women who face exclusions and unfair denials of their rightful claims.

6.5. Veneer of participation and closure of spaces

The call for realising *'surajya'* or participatory governance through digital technologies fails to make place for the voices of those who are off the connectivity grid. As much as 63.1% women in rural areas do not even have access to a mobile phone, according to the National Family Health Survey 2016. In certain states such as Bihar, Rajasthan and

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49 Caroline Moser makes the distinction between practical and strategic gender needs. Practical gender needs are the needs women identify in their socially accepted roles in society. Strategic gender needs are the needs women identify because of their subordinate position in society.

and Jharkhand, over 40% women are non-literate. This makes portals such as MyGov completely out of reach for most women.

The co-design of e-services and m-services through volunteerism by the technical community hardly qualifies for a vibrant and participatory system. While the engagement of the tech community is welcome and needs to be encouraged, a variety of civil society stakeholders, including grassroots women leaders, need to be involved in the design of digital solutions. App creation competitions and hackathons, in their current form, fail to do this. Techno-managerial imaginaries tend to guide roll-out, whereas there is no system design to listen to grassroots women's experiences of 'digital by default'. E-services modalities therefore lack a responsive and iterative design process. Further, the highly invisible, and invariably inscrutable, behind-the-scene operations of a range of technological corporations undermine the necessary democratic frameworks for service design. Public private partnerships characterised by transparent division of roles and responsibilities between state agencies and private sector partners and clear lines of public accountability are exceptions rather than the norm.

Online initiatives for citizen consultation and dialogue are not backed by robust legal-institutional guarantees for women citizens' right to be heard. Offline mechanisms for consulations with citizens with limited digital fluency and low levels of textual literacy are completely dysfunctional, if not absent. Unmoderated and open systems, as has been well documented in gender literature, can create a myth of participation where power tends to be invisible. The public sphere (including the online) is highly sexist and polarised along class, caste, community and other lines. It has also been observed that social media tends to amplify majoritarian narratives, reinforcing gender hierarchies (Goda, 2016). *Digital India's* penchant for catchy Tweets and Facebook campaigns may therefore do very little for inclusive and participatory development that gives women an equal place, without long term efforts to tackle gender inequalities in everyday cultural practices.

6.6 Skill India, lacking a gender reality check

In the neoliberal vision of "inclusive growth" espoused by the programme architects, enskillment, entrepreneurial innovation, and linkages to the global digital marketplace are the keys to opening up the benefits of the emerging digital economy for women. Such an entrepreneurial focus – evident in glib catch-phrases such as ' Make in India', and 'Start-up India, Stand up India' – eclipses the impacts of technology (and attendant policy frameworks) on a shifting economic and employment scene. The gender related implications of the transition underway for work and livelihoods has not been fully mapped out. Global research studies indicate that whilst new opportunities may open up for a few, highly skilled technology professionals who perform non-routine cognitive jobs, there is increasing casualisation and precarity for workers in mid-level routine cognitive

Global Institute in its 2017 Report has highlighted that digital automation is likely to heighten the *"growing divide in income advancement and employment opportunities between high-skill workers and those who are low- and medium-skill"* (Manyika et al.,2017, p-113). The World Economic Forum (2016) has highlighted that women are likely to be disproportionately affected in this transition: *"given the lower share of women in the labour force, the lack of focus on gender equality in some high-growth sectors and the potentially differentiated exposure to technological change for male- and female-dominated occupations....women face five jobs lost for every job gained, versus three jobs lost to one gained for men overall"*.

Digital India's vision for digital enskillment does not seem to be grounded in these realities. The popular discourse of the digital economy, with a prognosis for 5-7 million new jobs by 2020, does not account for the inability of the current paradigm to provide real choices for the majority of women. Given the low rates of female work participation and educational attainments, particularly in certain segments of the population, any potential *Digital India* revolution is likely to completely bypass rural, dalit and indigenous women. Only a miniscule percentage of urban, upper caste, university-educated women are equipped to take advantage of emerging opportunities for upward mobility through pursuing STEM careers.

6.7. Lack of bold imagination in delivery of new public goods, lack of traction for a gender strategy

Policymakers expect that the creation of digital public goods, such as the *Aadhaar* citizen identification system, e-NAM – the online agricultural market, or *Mahila e-Haat*, the online marketplace for women, will automatically open up pathways to empowerment for marginalised women. *Aadhaar*, it is presumed, will automatically ensure social inclusion of urban and rural women in poverty in the welfare net and also facilitate their financial inclusion, through the creation of a new digital payments architecture. Similarly, e-NAM and *Mahila e-Haat* are expected to enable small and marginal women farmers, producers and women-run enterprises to compete on an equal footing in the digital marketplace.

The provision of such facilities is an important policy move. Commissions or logistics overheads in e-commerce platforms may be unaffordable for women. Government-provisioned platforms for digital trade provide alternatives to commercial platforms and services that may be economically unviable or exploitative. Reliable digital payment gateways protect poor women from being defrauded, and can further their financial autonomy and independent control over digital assets. However, the complex livelihood

challenges that prevent the poorest and most marginalised women from participating in the market arise from gender based asymmetries in the mainstream economy. *Aadhaar* cannot compensate for lack of women's social capital or lack of economic assets and if anything, social credit rating systems that proliferate in the data economy can easily dismiss poor women as market unworthy.[50]

Digital India has not invested in creating a larger, gender aware and gender responsive economic ecosystem. The lack of vision and blueprint, absence of an institutional mechanism to bring together multiple ministries through cross-cutting programmes for women, and a peripheral role for the Ministry of Women are some significant factors reflecting a lack of imagination in purposefully using *Digital India* towards gender transformative ends.

6.8. Numbers that do not exist and many that do not add up

As is often remarked in relation to gender disaggregated statistics, what is not measured, does not count. From Internet use to impact of public access, digital literacy and skill development programmes, *Digital India* lacks statistical veracity in crucial areas for tracking gender based progress. Further, as has been discussed in the various sections of this paper, in relation to *Aadhaar*-enabled delivery of welfare services, on many an occasion, official figures have been unverifiable or incorrect. The Monitoring Committee on *Digital India* must invest in research and evaluation studies of the different strands of the programme, to facilitate effective tracking.

From plans to budgets and programme strategies, the role of data and information cannot be overemphasised. The availability of such data in technically inter-operable formats with clearly defined and transparently published metadata categories is also vital for civil society engagement with policy processes and to encourage a vigilant public. Open Data must be reclaimed as a methodology for creating a people-centric information system for democratic accountability, a *'Janta (People's) Information System'*, in the words of the National Campaign for People's Right to Information. In this regard, as discussed earlier, the design of the Management Information System of the MGNREGS scheme offers useful pointers.

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[50] For example, consider the emergence of the *Aadhaar*-based instant ID check application, https://www.trustid.in/

7. SUGGESTED POLICY DIRECTIONS

The policy road map with regard to the emerging digital context needs an urgent reorientation for socially transformative outcomes. The empowerment of women in the digital age depends on deliberate planning and dedicated resource allocation, along with strategic leadership at the highest levels of the government. The following directions will be key in determining how far the programme goes in effecting real change in terms of expanding women's life choices and enabling the most marginalised women to take advantage of the digital opportunity.

7.1 Constituting a mission mode project for women's rights in Digital India

In consultation with the Ministry of Women and Child Development, the government must launch a new project - *'Mission Women Digital'*, to provide impetus to access for women that is meaningful, gender inclusive e-service delivery, and digitally-mediated pathways for women's socio-economic and political empowerment. Digital technologies provide meta affordances that can promote women's information, learning, networking, communication, monitoring, safety and other needs and rights. *Mission Women Digital* must concern itself with building platform neutral guidelines to advance contextual and accessible design, gender-responsive accountability, confidentiality of data, and secure online environments in digitalised governance systems. Sectoral ministries such as agriculture, rural development, health, education must be involved in this effort. Scope for decentralised project planning at the state level will be important to make *Digital India* dynamic and context responsive.

7.2. Ensuring access through a rights-based framework

In line with the spirit of the National Telecom Policy 2012 that speaks of a 'right to broadband', quality Internet connectivity (matching global standards for broadband) and a universal data allowance must be provided. The latter can be instituted from the Universal Service Obligation Fund, with a specific quota targeted at marginalised

women. Support for content services run by local civil society organisations can create virtuous cycles of Internet use by women. Also, rights based access presupposes new governance frameworks on the cyber, to effectively tackle the threats women face online, especially gender-based violence, and to protect the integrity of the contemporary informational ecosystem. Ensuring network, information and data security of women users is very much part of such a rights based approach. A shift from narrow technical debates on cyber security to a more human centric and user differentiated approach on cyber sustainability is necessary.

7.3. Updating the Draft National Policy on Women's Empowerment

A policy on women's empowerment in the current digital context must identify specific strategic areas for gender-transformative change. These priorities must be explicitly reflected in the design of information outreach, welfare and social support, enterprise development, and e-learning and knowledge interventions, in the e-service pillar of *Digital India.*

7.4. Making the connectivity statistical system more robust

The quarterly Indian Telecom Services Performance Indicator Report released by TRAI must include gender-disaggregated subscription data on mobile phone and broadband connections. Similarly, the Census of India, NSSO Rounds and the NFHS should map different dimensions of digital use, including intra-household differences in access to computers, mobiles and the Internet.

7.5. Evaluation of gender based outcomes of Digital India and a focus on futuristic policy research

Digital India's core strategies with respect to universal and public access, digital literacy, digital enskillment, e-service delivery, e-participation, expansion of jobs and income generation opportunities, and creation of digital public goods for the economy, must be evaluated for their ability to expand women's strategic life choices. The changing terrain of social and economic public policy areas in the digital context also needs a well-

defined research programme that focusses on forward-looking considerations for gender equality.

7.6 Reassessing the CSC scheme

Facilitated access to the Internet through public access points is vital to enable socio-economically disadvantaged women and girls with limited textual and digital literacy skills to explore the Internet. It is unclear if the CSCs are playing this role as of now. A rigorous stocktaking of the scheme and its gender related outcomes is in order. Also, engaging local civil society partners in the scheme can go a long way to address the public interest considerations of access related policies, including in catalysing active citizenship of women. Local organisations can provide digital literacy and e-services in remote and rural locations for women who are marginalised, training them to use the online space for participating in governance.

7.7 Focussing on digital literacy as an embedded component of education

Research reveals that more than digital literacy courses, access to education makes a difference with respect to unlocking the empowering potential of the Internet for women and girls. Women's confidence in their digital abilities rises dramatically with increased education. What this means is that in contexts such as India, where many women have limited access to formal and higher education, digital literacy must be integrated into formal schooling and existing interventions for adult literacy and continuing education, instead of being confined to a silo. Akin to what has been successfully attempted in countries like the Philippines (IT for Change and UNESCAP 2016), digital literacy can also be positioned as a pathway to online vocational education courses and trainings that improve participants' employment prospects.

7.8 Using the digital opportunity for accountable and rights-based e-services delivery

A coherent strategy directed at strengthening e-services delivery for women is urgently needed, as outlined below:

- Efforts to design women-directed one-stop-shop portals and mobile info outreach

services in literacy, crisis support, livelihoods and welfare schemes should complement a renewed strategy on public access that is attractive to marginalised women.

• E-learning interventions for *anganwadi* workers and Accredited Social Health Activists (ASHA) need to be designed to build gender perspectives and skills of frontline workers.

• E-services should be based on effective data protection mechanisms that guarantee women's privacy. In *Aadhaar* seeding, establishing 'purpose limitation' principles is important (Shah 2012).

• Women's access to entitlements should be based on a rights-based framework – with service level guarantees and grievance redress mechanisms corresponding to the digital context.

• Monitoring frameworks must be geared to address not only 'inclusion errors' resulting from identity fraud, but also 'exclusion errors' leading to wrongful denial of services to women. In view of routine failures of the biometric authentication system for welfare schemes, it may be prudent to explore alternatives like a SMART card system (Khera 2017c).

7.9 Digital enskillment programmes for capital-enhancement

Women need to be trained to leverage their digital skills for renegotiating their socio-economic status rather than merely 'function' with them (Pearce and Rice 2017, cited in Broadband Commission 2017). This calls for changes to education policies that enable digital skills development in early years; integration of digital enskillment into vocational and open educational programmes; and policies to promote girls'/ women's participation in advanced technology jobs.

7.10 Reinvigorating Mahila e-Haat

The emerging ecommerce sector poses many challenges for women producers and traders. In this context, the *Mahila e-Haat* initiative holds the promise to become an important public policy instrument for expanding women's economic choices. However, it needs to be redesigned to attract a critical mass of women entrepreneurs/ producers/ traders, especially from marginalised communities. A cross-departmental collaboration

for women beneficiaries of all enterprise development programmes will be a useful starting point in this regard.

7.11 Developing positions on cross-jurisdictional issues

The digital context calls for new norms development in various global policy areas. Trade policy is one such. In the coming years, the government will need to negotiate these policy discussions strategically to ensure that the future digital society is just and the digital economy truly fair. It is imperative that domestic considerations of equity and social justice are intrinsic to India's positions in international negotiations.

7.12 Ensuring that the digital is a route to deepen democracy

The effective implementation of the National Data Sharing and Accessibility Policy (NDSAP) by all government departments and agencies and the meaningful integration of the NDSAP with proactive disclosure obligations of the Right to Information Act is critical for democratic accountability in the digital age. Women should be able to scrutinise welfare schemes and services through data that is "real-time", "public" and "discloses by default" all details of programme implementation.

Initiatives such as the MyGov portal need to be backed by techno-design elements and protocols that can foster meaningful citizen participation. They must use open source technologies to ensure that all deliberations, as well as the technological architecture and source code, are open to public scrutiny. In the post-truth era, meaningful public consultation is predicated upon the availability of evidence that is open for inspection to all. Further, they must effectively balance the need for identity verification with citizens' right to privacy, by ensuring that online anyonymity is not compromised in the process of cross-checking participants' credentials online. Finally, online citizen engagement in any issue/policy must be reinforced by offline, face-to-face public consultations. In a context such as India, such complementarity becomes crucial to reach out to women and other socio-economically backward groups who are off the connectivity grid.

7.13 Guaranteeing citizen accountability in the age of algorithmic decision-making

In the push for algorithmic decision-making in public policy processes, such as sentiment

51 Note on Janta Information Systems prepared by the Mazdoor Kisan Shakti Sangathan and School for Democracy for the Workshop on 'Mandatory disclosures and building of Janta Information Systems', April 2017.

analysis of the MyGov portal or the exploration of Big Data analytical solutions, the government must ensure that *"procedural regularity"* and *"explainability"* are not compromised (Vijayakumar, 2017). Considering that algorithmic decision making may produce inequitable outcomes due to encoded social biases, including a gender bias, a *"right to explanation"* akin to what has been guaranteed by the EU General Data Protection Regulation may become essential for citizen accountability.

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ANNEXURE 1. LIST OF KEY INFORMANTS

1. Anjali Bhardwaj, National Campaign for People's Right to Information

2. Dharmendra Kumar, Jan Pahel

3. Jahnvi Andharia, ANANDI

4. Sabina Dewan, Just Jobs Network

5. Sejal Dand, National Secretariat of the Right to Food Campaign

6. Name withheld, senior official from Ministry of Electronics and Information Technology

7. Names withheld, senior officials from Ministry of Women and Child Development

ANNEXURE 2. LIST OF ABBREVIATIONS

API	Application Programming interface
APMC	Agricultural Produce Market Committee
ASHA	Accredited Social Health Activist
BPL	Below Poverty Line
BPO	Business Process Outsourcing
CAS	Common Application Software
CSC	Common Service Centre
DBT	Direct Benefit Transfer
DISHA	Digital Saksharata Abhiyan
DoT	Department of Telecommunications
DTP	Desktop Publishing
FAQ	Frequently Asked Questions
FB	Facebook
GBV	Gender Based Violence
GST	Goods and Services Tax
GUN	Government User Network
HIV	Human Immunodeficiency Virus
ICDS	Integrated Child Development Services

ICT	Information and Communications Technologies
IPC	Indian Penal Code
ISP	Internet Service Provider
ITA	Information Technology Act, 2000
ITU	International Telecommunications Union
IVR	Interactive Voice Responsive System
MGNREGS	Mahatma Gandhi National Rural Employment Guarantee Scheme
MIS	Management Information System
MLAT	Mutual Legal Assistance Treaties
MSMEs	Medium, Small and Micro Enterprises
MUDRA	Micro Units Development and Refinance Agency
NAM	National Agricultural Market
NDSAP	National Data Sharing and Accessibility Policy
NeGP	National e-Governance Plan
NFHS	National Family Health Survey
NOFN	National Optical Fibre Network
NSAP	National Social Assistance Programme
NSS	National Sample Survey
NGO	Non Governmental Organisation
OSC	One Stop Centre
OGD	Open Government Data

PDS	Public Distribution System
PMGDISHA	Pradhan Mantri Gramin Digital Saksharata Abhiyan
PMKVY	Pradhan Manthri Kaushal Vikas Yojana
PMO	Prime Minister's Office
PPP	Public Private Partnership
RTI	Right to Information
SC	Scheduled Caste
SHG	Self Help Group
SMS	Short Message Service
ST	Scheduled Tribe
SWAN	State-wide Area Network
TRAI	Telecom Regulatory Authority of India
TSP	Telecom Service Provider
UIDAI	Unique Identification Authority of India
UNICEF	United Nations Childrens' Fund
USOF	Universal Service Obligation Fund
UT	Union Territory
VAS	Value Added Services
VAW	Violence Against Women
VLE	Village Level Entrepreneur
WCD	Women and Child Development

ANNEXURE 3. GLOSSARY

Anganwadi: The word anganwadi means "courtyard shelter" in Hindi. Anganwadis were set up by the Indian government in 1975 as part of the Integrated Child Development Services program to combat child hunger and malnutrition. These centres provide supplementary nutrition, non-formal pre-school education, nutrition and health education, immunisation and health check-up.

API: An application programming interface (API) is a particular set of rules ('code') and specifications that software programs can follow to communicate with each other. It serves as an interface between different software programs and facilitates their interaction, similar to how user interfaces facilitate interaction between humans and computers.

Beti Bachao, Beti Padhao (Save the girl child, Educate the girl child): National level government campaign for protection and empowerment of the girl child.

Convergent service delivery: This refers to a situation where a citizen is able to access public information and government services at a single point – whether a physical kiosk or a virtual portal.

De-identification: This refers to the process of preventing a person's identity from being connected to her personal information, in digitalised data sets. This includes not just anonymisation or removing the name of the person,from data sets, but also the removal of other personal identifiers such as citizen ID number, zip code or date of birth, comprising any data point that allows tracing back the identity of the person.

Digital capabilities: Digital literacy, media literacy, and information and data literacy skills that are required for meaningfully using the Internet and other digital technologies for expanding one's strategic life choices.

Dalit: members of those groups which have been historically oppressed by the workings of the caste system.

Datafication: As the Internet increasingly intertwines with social, economic and political life, personal and behavioural data pertaining to most aspects of our lives are captured by Internet platforms. This data is a veritable goldmine providing the basic raw material

Nirbhaya Fund: An Indian rupee 10 billion corpus announced by Government of India in its 2013 Union Budget. This fund is expected to support initiatives by the government and NGOs working towards protecting the dignity and ensuring safety of women in India.

Sarpanch: Elected head of the Gram Panchayat

Teledensity: The number of telephones per 100 population, an indicator of telecom penetration in the country.