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ICT FOR WOMAN EMPOWERMENT & SUSTAINABLE DEVELOPMENT IN RURAL INDIA

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ABSTRACT
Since the 1990's women have been identified as key agents of sustainable community development. The World Bank has suggested that empowerment of women should be a key aspect of all social development programmes. The empowerment of women means for them to have the necessary ability to undertake a number of tasks either individually or in groups, so that they have further access to and control of society resources. Empowerment is recognized as an essential strategy to strengthen the well-being of individuals, families and communities, government and non government agencies information and economic resources determine the achievement of good education, participation in decision-making processes and politics. Better engagement of grassroots communities accelerates the unlocking of women's potential, boosts their self actualization and effectively mobilizes the support of crucial stakeholders within their areas of residence. Although considerable progress has been made in creating an enabling environment for women empowerment, there is still need for improving the dissemination of information and developing viable economic empowerment models for women, in particular those in rural areas. Information and Communication Technologies (ICT) are one of the best ways to facilitate the empowerment process of women and girls to develop, involve and integrate them in economic, political, technological and social environment of the world. The potential of ICT for women in developing countries is highly dependent upon their levels of technical skill and education, and is the principal requirement for accessing knowledge from the global pool. The sophistication of any ICT infrastructure introduced into any environment becomes meaningless if women don't have the skills to operate the system and use it to their best advantages. This paper discusses the hurdles and challenges in empowerment of women through ICT in India and also the steps that are being taken by government, organizations, businesses, non-government organizations to empower them through ICT.

Keywords: *Sustainable community development, Women empowerment, ICT for development, ICT for women, ICT & Sustainable development.*

I.   INTRODUCTION

Empowerment is largely defined as a process of change that increases choice (resources) and enhances the capacity to make choices favourable to oneself and to society in general. Empowering women is about ensuring that they can participate fully in social, economic and political life. Empowered women are an integral part of a developed society **[3][4].** As women gain better access to healthcare, education, livelihood and political participation, they feel more empowered, and in turn, they are better able to contribute to social and economic development. Women are powerful drivers of economic growth **[5][6].** Effective engagement of women in the national economy has positive socio-economic effects for the corresponding country. Education can play a part to raise the awareness of unjust treatment, and can provide skills and experience that give the psychological boost for a person to take action **[13][16]**. If women have higher literacy rates and lower fertility rates, then developing countries would generally have lower infant mortality rates. An educated woman gets the opportunity to be a part of a local as well as global workforce, thus contributing to her own and society's collective development **[15]**. If a woman knows of positive role models or has the support of a community, then she would also feel more empowered over her life **[16]**.

The majority of women in the developing world do not have access to ICTs due to variety of barriers as such the infrastructural, social, cultural and linguistic. To make women independent, powerful and strong in all fields with the help of ICT necessary actions are to be taken at regional, national and international level **[17]**. ICT provide resources, information and opportunities for development. ICT has a critical role to play in ensuring gender equality and gender empowerment. Access to ICT can empower women to get their voice heard at community, state and international levels. ICT helps women to create their own space and agency **(Hussain, 2016)**. ICT helps women to gain better status within their society and to excel professionally. It is necessary to build up women capacities to involve them in productive activities, institutional building, family and social transformation, decision-making process, political representation, trade and commerce, entrepreneurial development and social leadership **[9][18].** ICT works as a catalyst for a woman's empowerment because it is a cheapest modern tool that can raise awareness on empowerment, encourage literacy and education, connect markets with sellers and serve as a platform for dialogue **[17].**

ICT has is a potent force in transforming social, economic and political life globally for Indian women. Without its incorporation into the information age, there is little chance for countries or regions to develop. More and more concern is being shown about the impact of those left on the other side of the digital divide the division between the information "haves" and "have-nots." Most women within developing countries are in the deepest part of the divide further removed from the information age than the men whose poverty they share **[7][8]**. So there is a need to enhance opportunities to women to enable them to own, manage and control industries and service enterprises including IT-based units. There is also need to provide more opportunities in erelated sectors to them in higher managerial, technical positions in government and non-government agencies, research, educational institutions in private and public sectors, without confining their role to only call centers, telecentres, data-entry level and lower levels in the organizations **[19].**

II.   CURRENT STATUS & WOMEN SHARE IN ICT PLATFORMS

World Wide Web is an immense source of information. It has been broadly used for obtaining any information at any time independent of the location. However now it is also being used to create awareness in society **[20]**. Small groups working on various social stigmas can easily use the WWW to reach masses, like discrimination against women or inequalities between men and women. WWW is becoming more popular among women to get recognition. ICT is playing an important role in changing the attitude and perspective of society towards women. It is creating a psychological comfort level of women at their work place by providing them additional knowledge and skills. Psychological empowerment can be at organizational level, personal level or social level [17]**[21].** Through Internet, television, radio and mobile phones women are getting information about all the real incidents happing in world and learning skills to tackle situations; it is helping to bring leadership qualities in them. It can get greater access to services, greater accountability, transparency and citizen empowerment, strategic reward such as improved decision making through information, improved knowledge sharing and organizational learning, improved interactions with citizens, other government organizations and businesses and industry, improve market relationships between government and private sectors and greater ability for organizational change management **[7][8][17]**.

India currently has a total population of over 1.25 billion people. India has 478 million active Internet users. First time Rural India overtakes urbanites. India is the second-largest online market. The number of mobile internet users stood at 456 million in December 2017. It is estimated that by 2021 there will be around 560 million active internet users in India **[22]**. The majority of India's internet users are mobile phone internet users, who take advantage of cheap alternatives to expensive broadband/ Wi-Fi connections that require PC, laptop and other equipment. Indian mobile data users consume 11 gigabits (GB) of data each month on average, India is the highest globally. The overall data traffic in India will increased by 45-47% till 2019. Mobile data consumption in India has grown 24 times in the past 5 fiscals. India's mobile data usage per subscriber has also risen over 20-fold in the past 5 years, particularly the rollout of free services by Reliance Jio in September 2016 **[30].** India set to have 530 million smartphone users in 2018. India currently has in between 300-400 million smartphone users. There are about 650 million mobile phone users in India, and just over 300 million of them have a smartphone **[29]**.

With the ease of internet access, the number of social media users in India stood at 326.1 million in 2018. Only 30% of internet users in India are women [31]. At the end of 2018, the number of social media users in India will have stood at 326.1 million. At the end of 2019, this number has been estimated to 351.4 million [32]. Adults in India will spend an average of spends 200 minutes a day with digital media. Adults' average time spent per day with digital media will grow 14.4% with much of that spurred by rural populations gaining internet access for the first time. It is estimated that there will be around 258.27 million social network users in India in 2019, up from close to 168 million in 2016. The most popular social networks in India were YouTube and Facebook, followed by social app WhatsApp, Facebook is projected to reach close to 319 million users in in India by 2021 [31]. Typically, women dominate social media the world over but India is a different story. For every woman using Facebook, there are three male users on the platform. Comprised of 24% women, the country's Facebook user base gender ratio is one of the worst in the Asia-Pacific Region

Facebook has the younger generation. The largest user group by age on Facebook is 18-25 years. The number of Facebook users in India stands at 241 million. Facebook's active users in India also skew young, with more than half of the country's users below the age of 25 [33]. Facebook touched 125 million users in India. Only 24% of Facebook users in India are female. "Women got left behind in the education revolution, the industrial revolution, and now we see that happening in the digital revolution. Approximately 22 million women users will be in Facebook till 2021. Roughly 52% of Indians use Facebook as a source of news. [34]. There would be approximate 72 260 000 people on Instagram in India as of November 2018. The majority of them were men - 73.3%. Only 26.7% are women, aged 18 to 24 were the largest user group [35]. Instagram is the 8th most used mobile app in India. India has the 3rd largest number of fake followers on Instagram [36]. The number of Twitter users across the country was estimated to be over 26.7 million in 2017. 17% of social media users in India look at Twitter as a source of news. Gender inequality is really high on Twitter with 38% of Twitter audiences were female and 62% were male [37]. The most common type of Twitter interaction is likes with 83% of the engagement coming from likes, followed by retweets, 9% engagement and then Replies 8% engagement. 15.1 million People use Snapchat daily. Snapchat usage is increasing in India. There has been a 40% increase in the number of daily users in India from 2018 to 2019. Snapchat grew 75% year on year in 2018, with 55% of the audience being women, which makes it one of the extremely rare platforms with a female majority [31][33]. India is the second largest market for LinkedIn with 53 million active users. Approx 7.4% of LinkedIn traffic is from India. Approx 22% of influencers from India identify LinkedIn as a very important platform for Influencer marketing [31]. World's largest professional network platform, LinkedIn has witnessed a remarkable growth in India. With 50 million userbase, India is only behind US (150 million usersbase) while China stands at third position with 40 million. India stats are still far behind the US but it has become the highest growing country in the last two years. In 2016, the US-based company had claimed 37 million users in India which grew by 13 per cent to cross 42 million userbase in the country by April 2017. The entry of WhatsApp into India's digital market boosted app usage, with a doubling in rural areas in recent years [38]. The share of WhatsApp users in rural India has doubled over the past year amid declining data costs and increasing internet usage. One-fifth or 20%, of rural respondents used the app daily as compared with 38% of urban respondents. Men (21%) are slightly more likely than women (19%) users. WhatsApp usage in India is being driven largely by the youth aged between 18 to 25 years [39]. In India only 38% of women use mobile phones, while it is 71% for men. Mobile phone penetration in India set to rise to 85-90% by 2020 Mobile phone penetration in India set to rise to 85-90% by 2020 [40][41]. However, only half of the smartphone owners in the country are going to subscribe to network data service by 2020. According to the report, only 44.1% of women own a mobile phone compared with 73% of men, and women comprise only 35% and 25% of mobile internet and Facebook users, respectively [41]. In 2023, it was estimated that 31% of the Indian population will be accessing social networks. The social network users in the country were expected to be almost 448 million in 2023 [34].

III.   ICT & WOMEN EMPOWERMENT

Apart from direct engagement, ICT has benefited women in a number of ways. It is a viable tool of information and communication which goes a long way in empowerment of women. Immense amount of information is obtained through the internet [1][17][23]. Effective and efficient use of information technology like internet can help in

assimilating information about variety, range and quality of products, publicity and marketing of products and services. Apart from being used as a tool of information and communication, ICT has created avenues for women empowerment [10][21]. Women stand to benefit tremendously from the inroads laid by ICT in the domain of knowledge networking. ICT have the potential to digitally link each and every woman in the world in a star topology network, which opens up endless possibilities for information exchange [19][24]. This mechanism could be used by women in creative ways, both to communicate with other people who are online, and also to disseminate information to people in the outside world who are not online through the use of convergence and hybrid technologies such as community emails, community radio broadcast, telecentres, newsletters, videos etc. This mechanism forms the skeletal process through which women communities could overcome the constraints of seclusion, mobilise resources and support, reach out new markets, and open up avenues for life-long learning [23][42]. We could broadly classify the spaces in which women stand to gain under the spheres of Empowerment and Governance. This condition forms the basis of evolution of women as equal contributors and end-users of knowledge in a knowledge society

The gender divide within the digital divide can be seen in the lower numbers of women users of ICTs compared to men. One illustration of this is the number of women Internet users. The majority of the world's women do not use the Internet. The digital divide within countries broadly reflects the gender divide [25]. Women are in the minority of users in almost all developed and developing countries. Women have relatively little ownership and control of the ICT sector. Women are underrepresented on the boards and senior management of IT companies, policy and regulatory organizations, technical standard-setting organizations, industry and professional organizations and within government bodies working in this area [26]. Women's participation as employees in the sector presents a more complex picture. The new economy rides on the power of ICTs. Job outsourcing is an important business strategy today and has given rise to a new global division of labour. Internationally outsourced jobs, such as medical transcription work or software services, have made a considerable difference to women's work opportunities in developing countries. Women hold 15 per cent of mid to upper-level IT related jobs in engineering and make up 35-45% of computer programmers and 30% of systems analysts. Only among data entry workers the women form the majority at 85 percent [27]. ICTs provide opportunities to reorganize economic activities in ways that can bypass the traditional dependence of women producers on male-dominated and exploitative market structures, including "middle-men". In many places, initiatives are being tried that link women artisans directly to global markets through the Internet, as well as support their activities with market and production information.

The 'Inter-city Marketing Network of Women Entrepreneurs' project in Chennai, India has set up a communication network among women's community-based organizations (CBOs) to market their produce. The CBOs are provided with cellular phones, and women have been trained to maximize the use of telephones for selling not only in their immediate neighbourhoods but also reaching new markets within the city. The impact is that poor women from CBOs constrained by pressures of time and mobility are able to assess and aggregate market demand by trading through their peer CBOs, and evolve cost-effective mechanisms to increase business turnover by making the most of business networking.

The technologies are being successfully used in many places for information dissemination about health. The Self Employed Women's Association (SEWA), a trade union of women workers from the informal sector in India uses video to convey basic health information to its women members. Women themselves have produced video footage on how to address diarrhea through oral rehydration therapy, and they distribute this through their networks. New ICTs can also play a critical role in health delivery [17][20][28]. The use of networked information exchange systems, and offline information tools like CD ROMs, databases and mobile ICT devices can enhance public health delivery. They can enable health education and information dissemination, bring communities and health facilities closer to each other through regular and systematic information exchange, and offer simple solutions for collecting and analyzing information about disease and health-seeking behaviour to help health interventions become more locally relevant. The main goal of SEWA is to promote local income generating opportunities among women. The Self-Employed Women's Association SEWA, with 200,000 membership is spread over 800 villages in Gujarat. It uses an interactive satellite communication and Internet-based training programme to develop a cadre of barefoot managers among the poor women workers, focusing on women in panchayats, forests, water conservation and so on.

Through ICT, training is provided on issues as disaster management, leadership building, health and education, child development etc.

IV.   CONCLUSION

The majority of women in the developing world do not have access to ICTs due to variety of barriers as such the infrastructural, social, cultural and linguistics. While it may be necessary for the progressive elite to mediate information dissemination, real democratization of information depends on making ICTs relevant to the majority and accessible to every woman. Today, print media and radio are used extensively by feminist groups for information dissemination. ICTs can strengthen these media strategies. Community access points such as telecentres can be a simple tool for conveying information to women that supports their social and political empowerment. Governments and NGOs have to take a lead in this process of universal access to rights-based information, especially in rural areas. ICTs can provide spaces for diverse, bottom-up and low-cost communication. They can amplify women's voices, help publicize women's experiences and perspectives and integrate their specific concerns with the mainstream policymaking and development process. Engendering ICTs is not merely about greater use of ICTs by women. It is about transforming both gender politics and the ICT system. It is evident that the ICT system is organized on elitist, patriarchal, techno-centric, non-democratic lines and based on capitalist values. Transformatory gender politics will need to question these values and search for ethical alternatives. This calls for synergy between a new bottom-up culture of ICT production and use and the re-engineering of the global ICT system. Addressing the ICT arena is part of a larger struggle to build an information society based on protecting people's right to communicate, own and use knowledge for their own ends and resisting curtailments on freedom to use, share and modify information tools and content.

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