ICT and its Impact on Women: A Study in Two Districts of Odisha

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BY

SEEMA MAHAPATRA

CENTER FOR THE STUDY OF SOCIAL EXCLUSION AND INCLUSIVE POLICY
SCHOOL OF SOCIAL SCIENCES
UNIVERSITY OF HYDERABAD
HYDERABAD- 500046

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CENTER FOR THE STUDY OF SOCIAL EXCLUSION AND INCLUSIVE POLICY
SCHOOL OF SOCIAL SCIENCES
UNIVERSITY OF HYDERABAD

DECLARATION

I hereby declare that the work embodied in this thesis entitled **"ICT and its Impact on Women: A Study in Two Districts of Odisha"** has been carried out under the supervision of Dr, Ajailiu Niumai and has not been submitted for any degree in part or in full to any other university or to this university.

Date: SEEMA MAHAPATRA

Hyderabad University Regd. No: 08SIPH02

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Acronyms and Abbreviations

AIR	:	All India Radio
AWCs	:	Anganwadi Centres
BDA	:	Bhubaneswar Development Authority
BPL	:	Below Poverty Line
BPO	:	Business Process Outsourcing
BSNL	:	Bharat Sanchar Nigam Limited
C-DAC	:	Centre for Development of Advanced Computing
CIC	:	Community Information Centres
CR	:	Community Radio
CRISP	:	Centre for Research on Innovation and Science Policy
CSC	:	Common Service Centres
CSDS	:	Centre for the Study of Developing Societies
DDS	:	Deccan Development Society
DG	:	Digital Green
DHAN	:	Development Of Human Action
DIT	:	Department Of Information Technology
DoA	:	Department of Agriculture
DRDA	:	Department of Rural Development
DST	:	Department of Science and Technology
E-CRM	:	Electronic- Customer Relationship Management
EU	:	European Union
ICR	:	Intelligent Character Recognition
ICT	:	Information and Communication Technology
IFFCO	:	Indian Farmers Fertiliser Co-operative Limited
IIIT	:	Indian Institute of Information Technology
IIT	:	Indian Institute of Technology
IMD	:	Indian Meteorological Department
InDG	:	Indian Development Gateway
IP	:	Internet Protocol
IRMA-India	:	Information Resource Management Association- India
ISP	:	Internet Service Provider
ISRO	:	Indian Space Research Organisation
IT	:	Information Technology
IT4D	:	Information Technology For Development
ITES	:	Information Technology Enabled Services
ITU	:	International Telecommunication Union
KCC	:	Kisan Call Centre
LAN	:	Local Area Network
MDGs	:	Millennium Development Goals
MoHRD	:	Ministry of Human Resource and Development
MSSRF	:	MS Swaminathan Research Foundation
NeGP	:	National e-Governance Plan
NeGP	:	National E-Governance Plan
NGO	:	Non-Governmental Organization
NIC	:	National Informatics Centre
NTP	:	National Telecom Policy
OCAC	:	Odisha Computer Application Centre
OPEPA	:	Odisha Primary Education Program Authority
OSVSWA	:	Odisha State Volunteers And Social Workers Association
OTDC	:	Odisha Tourism Development Corporation
PDS	:	Public Distribution System
PPP	:	Public Private Partnership
RKC	:	Rural Knowledge Centres

RML	:	Reuters Market Light
SHGs	:	Self Help Groups
SIS	:	Scheme Information System
SITSB	:	State Information Technology Services Board
SMS	:	Short Messaging Service
SSA	:	Sarva Shikhshya Abhiyaan
STPI	:	Software Technology Parks of India
SWEA	:	Self Employed Women's Association
TNAU	:	Tamil Nadu Agricultural University
TRAI	:	Telecom Regulatory Authority of India
UN	:	United Nations
UNDP	:	United Nations Development Programme
UNESCO	:	United Nations Educational, Scientific and Cultural Organisation
VASAT	:	Virtual Academy for Semi Arid Tropics
VDC	:	Village Development Committee
VS	:	Video Sewa
VSNL	:	Videsh Sanchaar Nigam Limited
WAN	:	Wide Area Network
WB	:	World Bank
WHO	:	World Health Organisation
WSIS	:	World Summit on the Information Society
WWW	:	World Wide Web

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CHAPTER- I

INTRODUCTION

ICT's[1] have become a very important aspect for the development of a nation and a clear definition of ICT needs to be understood before going to the depths of the concept and its impact on women. Dalal (2006:1) says that, "Information and Communication Technology comprise a complex and heterogeneous set of goods, applications and services used to produce, process, distribute and transform information"[2]. Dalal's definition of ICT clearly says that the distribution of information in a effective manner is the main goal of ICT. To further get a clear understanding of the term ICT, there is a need to understand what is meant by Information Technology and then proceed to the understanding of ICT. The Institute of Open and Distance Learning, University of Mumbai (year not known:27), say that "Information Technology refers to the information processing of the software application on operating systems or hardware applications that includes computers, videos, telephones and related equipments of telecommunications, tapes, CDs etc"[3]. This definition basically gives a picture of the technical aspect required for the spreading and sharing of information. ICT as defined by Kundishora (year not known:3),"ICTs is a generic term referring to technologies that are used for collecting, storing, editing and passing on (communicating) information in various forms"[4]. These technologies include radio, television, print media, telephones, computers and internet which are being widely used in almost all spheres of life.

All around the world, ICT is being used as an effective tool for the development of the economy, enhancing the performance of the government, developing human resources and spreading of data and resources at a rate which would have been unimaginable in the earlier societies. ICT helps in bringing people of different sectors and zones together and drastically improving the level of connection and contact between individuals and societies to a great extent. The scientific revolution in the form of Information and Communication Technology has brought about new ways of people communicating to each other, new ways in conducting business, modes of recreations and has created a vast area of social network. Today, in the so

[1] ICT stands for Information Communication Technology.
[2]Available online on:
[http://unpan1.un.org/intradoc/groups/public/documents/APCITY/UNPAN029838.pdf] [Accessed on 18th November, 2009].

[3] Available online on:[http://www.mu.ac.in/myweb_test/ma%20edu/ICT%20-%20Edu..pdf] [Accessed on 18th November, 2009].
[4] Available online on:
[http://siteresources.worldbank.org/CMUDLP/Resources/Role_ICT_paper.pdf] [Accessed on 3rd December, 2012].

called modern world it is almost impossible to live life without the help of technology. Yesterday's luxury has become today's daily necessities. The aspirations of the modern societies all around the world are growing more and more. Development and progress are expected to advance the quality of everyday life in the sphere of material as well as political conditions of every individual. . As such technology is integral to any modern day private or public life. ICT being an important medium, its scope remains unmeasured and holds enormous potential for further exploitation of ICT's towards the betterment of human future.

Due to advent of globalisation, the Indian economy has been suddenly growing at a very high speed. Due to the development that has occurred in the field of Information Technology, it has facilitated a global communications network that spreads across national boundaries and also has an impact on public policy, attitudes and behaviour of individuals, especially of children and young adults. Information technology has now been on the national agenda and many states, namely, Tamil Nadu, Meghalaya, Odisha, Punjab, Goa, Gujarat, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Rajasthan, Sikkim, Uttar Pradesh, West Bengal, Pondicherry etc. across the country have announced the policies to use ICT as a mechanism for better governance, providing services, sustainable development, globalisation of the economy, social empowerment, education and various other fields of life.

India being a democratic country, everyone is free to access information and in this regard information becomes a key to democracy because without information, transparency will be absent and thus making the country undemocratic. Today a common man can access global information with the help of ICT.

There are a huge group of workingwomen in India who hail from the rural and unorganized sectors. Majority of the Indian women are traditional in nature and are in a marginalised position. There exists a wide range of inequality when it comes to women's access and participation in all the communications systems, especially the media and there is also a lack of mobilization to promote women's contribution to society even in the present day scenario. The media has the capacity or potential to make far reaching contributions to the development of women. ICT's can create favourable and soothing environments that will be able to extend communication and accessibility infrastructure to women[5]. More women are

[5] Available online on:[http://www.ifuw.org/seminars/2007/jain.pdf(Accessed on 8th October 2010)].

involved in opting for careers in the communications sector, but only a few are becoming successful enough to climb the ladders of success and reach the decision-making level or serve on governing boards and bodies that influence media policy. The lack of gender sensitivity in the media is very clearly visible by the inability to do away with the gender-based stereotyping that can be found not only in the public and private media domain but also the local, national and international media organizations[6]. The unrelenting projection of negative and degrading images of women in media needs to be changed. The print and electronic media should provide a unprejudiced picture of women's varied lives and their far-reaching contributions to the society in the present day changing world.

Emergence of ICT on the national agenda and due to the announcement of various ICT policies by several state governments has to a great extent added to the strength of India's position in the present day software obsessed ICT sectors in the world.

The state of Odisha declares its objectives to promote ICT in the policy of the ICT 2004. The state government commits itself for the provision of: reasonably priced access to information, transparency in government practise, easy delivery of multitude of services, increase in employment and high export turn over and economic growth. The objectives will be worked out through certain agencies like State Information Technology Services Board, Department of Information and Technology, Odisha Computer Application Centre, Software Technology Parks of India. The government will also impart teaching in information and technology in schools and also impart special training to the teachers. These are some of the policy features of the government of Orissa with regard to ICT[7]. However, these are recent developments and there is not much of an account of their outreach and impact. There is also not much of an account of its outreach to the women in particular and the difficulties that these modern edifices face in the form of cultural barriers when it comes to reaching out to the women folk.

STATEMENT OF THE PROBLEM

This study is significant as there has been no work done on women and ICT in the state of Odisha. Miller (2000), says that on the one hand women and girls have been exposed to a great deal of marginalisation and discrimination in the various fields like education, health,

[6] Ibid.

[7] Available online on:[http://www.orissa.gov.in/information technology/ICT%20 Policy.pdf (Accessed on 5th September 2010)] .

economic independence and social services access throughout the world, but on the other hand women's input to the economy is high. These economic activities include employment in both the formal sector as well as the informal sector, self-employment in farming, trading and crafts production etc. There are several possibilities for ICTs to improve women's economic activities in the field of trade, governance, education, health and the like as well. ICT's bring huge opportunities to women in the work places and small businesses as well.

Women are the equal shareholders to the rewards offered by technology, and the products and processes, which are outcome of the technology use. However, it should not be confined to elite group of society but should reach the other segments of women in Indian society equally as well. It is very significant to know about the available social, economical and educational infrastructures available to diverse segments of the women and the social freedom and opportunities in both rural as well as urban areas.

REVIEW OF LITERATURE

Jain (2007) in her article "ICTs and Women's Empowerment: Some Case Studies From India" speaks about how Knowledge Networking helps in the process of women's empowerment by opening up various channels for women to liberally express and share their experiences, views, concerns and knowledge. This will help in the creation of an opportunity for their further improvement. By the use of ICT women can expand their horizon and widen the scope of their activities and deal with issues which were earlier beyond their capacity. In view of the fact that India has been using ICT for progress for more than two decades, there are many good practices for the use of ICTs for women's empowerment. Jain, also highlights on the fact that in some Indian projects like India Shop which is an e-commerce website in Tamil Nadu, has been planned to sell products made by rural women's co-operatives and NGOs. Jain, also mentioned about the Self-Employed Women's Association which has several ICT projects for women, like community learning centers, a school of Science and Technology for self-employed women, and the Telephone project, which provides mobile phones to women in the informal sector. She also found that self-help groups of rural women located in Andhra Pradesh, have been successful in marketing their products at home and abroad to such an extent that the chief MNCs want to use their trading skills. She also talks about how important it is for the women to get access to an information and that ICT can play an important role in letting out the information for the empowerment of women in India.

According to a UNESCO (2003), report on "Gender Issues in the Information Society", the potential of women to efficiently make use of information obtained through ICT is to a great extent dependent on many social factors, which include literacy, education, geographic location, mobility and social class.

Pattnaik (2011), in his article "Community Information Centre: Enabling Technology And Empowering Poor in Rural India" highlights on the fact that Information and Communication Technologies (ICT) belong to each and every individual without any bias for urban or rural communities in particular. Current developments in the area of Information and Communication Technology are without a doubt innovative in nature. He says that, if we look at the definition, Information and Communication Technologies (ICT) are a diverse set of technological tools and resources to create, disseminate, store, bring value-addition and manage information. Hence, according to Pattnaik, knowledge thus becomes the primary resource for all economic and developmental activities in the knowledge society, of which rural poor form an integral part.

He then highlights on the fact that agriculture is the basis of Indian economy and about 60 percent of the labour force contributes nearly 26 percent of the GDP and accounts for about 18 percent share of the total value of the country's exports. He also highlights on the literacy rate in the country which is 65 percent and 51 percent is for females. 27 percent of the rural population lives below poverty line and in a state like Odisha; the rate of poverty is 48 percent in rural areas which is very high.

Pattnaik (ibid), also says that segregation of rural communities from the mainstream economy and their lack of access to information because of various societal, cultural and market constraints have distanced them from the global team of information and knowledge. But he says that, one resource that emancipates them at large from poverty and encompasses them is knowledge and its widespread distribution. Since women folks play a significant role in the economic development of the nation it will be unwise not to study their participation and devoid them of their need of the information and communication technology.

Hence, it becomes imperative to study the impact of ICT in the development of women in Odisha. It will focus on whether the policies which have been formulated by the state and national government for the development of the people especially the women are positive or

negative. Since there are very few organisations that deal with ICT and women in Odisha and very few literatures related to this, this study becomes important in opening up discussions on this very important issue.

Social Exclusion is a new concept it has become a very important subject because of its ability to explain the social behaviour in different ways which can be of further use in understanding, analysing, and designing a new social order. According to Prasad (2003), social exclusion originated in Europe during the 70's. And the credit of first using the term "Social Exclusion" goes to the French scholar named Rene Lenoir. Lenoir's excluded includes a wide variety of people like the poor, the handicapped individuals, suicidal and aged people, abused children, substance abusers, etc. It has been very useful in explaining other kinds of marginalization such as women, racism, poverty, stigmatization, disability etc. In India the term has been used mostly in explaining the caste system, women, children, disability, and various other indigenous tribal groups who are still left away from the mainstream.

Prasad (ibid), talks about the very notion of social exclusion which has in recent times been used to envelop a large range of exclusions, which are particularly significant in Asia. He further says that social exclusion basically focuses on the processes of deprivation, which excludes individuals or groups from partially or fully participating in the society in which they live. Evans (1998), says that social exclusion is a multi-dimensional concept, as it brings under its purview different forms of social disadvantages like economic, social, political and cultural, which exists at different levels in different nations. The concept of social exclusion is covers a wide range of social and economic problems and they incorporate various groups as well like the physically and mentally handicapped, suicidal people, aged invalids, abused children, delinquents, single-parents, and other social problems as well. There are different scholars, such as, Hilary Silver, Jackson, Amartya Sen, Naila Kabeer, etc who have defined the concept of 'Social Exclusion" in their own way. One of them is de Haan (1999), who discusses several definitions of "social exclusion" and emphasizes on "the process by which individuals or groups are wholly or partially excluded from full participation in the society within which they live[8]".

[8] Quoted in "Social Exclusion: Concept, Meaning and Scope" (2003), R.R. Prasad, p. 145.

Haan (ibid), definition of social exclusion clearly explains that any individual or group who are not allowed partially or completely from a holistic participation in the society in which they live will be considered to be socially excluded. According to Silver (2010), the concept of social exclusion is, "associated with a variety of terms like superfluity irrelevance, marginality, foreigners, alterity, closure, disaffiliation, dispossession, deprivation, and destitution and social inclusion is about insertion, integration, citizenship or solidarity[9]". Hilary Silver too defines social exclusion using various terms, which basically points on separation or leaving out in a negative sense and social inclusion is all about bringing together and it has a positive connotation. For some scholars the term social exclusion is multidimensional, Evans (1998), states that "Social Exclusion is multidimensional and dynamic in character". On the other hand, Commins (1993) in Evans (1998:42), has given a clear exposition of this and "presents four dimensions, i.e. exclusion from: civic integration-a failure of democratic and legal system, the labour market, welfare state provision, family and community"[10].

While discussing about the concept of social exclusion, it has been found that women also come under the excluded category along with the aged, disabled, blacks, etc. Before starting the discussion on women, the concept of gender needs to be discussed.

Gender is a concept of social exclusion because women are a marginalized group who endow with the method of the birth of human beings but needs security, as if she is some kind of a rare species on the verge of extinction. Women are discriminated because of their gender and hence fall under the category of exclusion. It is well known that gender equity has not been achieved even in this twenty-first century. Even in most of the democratic countries/society, equity for women seems to be a distant dream. This is in view of the women who are in every respect as abled as their male counterparts. The demand for gender equity can come after a clear definition of gender. The famous anthropologist Margaret Mead (1963), says that the masculinity and femininity is to a great extent decided on the culture of a particular region or society. She also says that the traditional roles assigned to men and women vary from

[9] Ibid (2003), p. 147.
[10] Available online on:
[http://martin-evans.pixillionserver.co.uk/assets/files/BehindtherhetoricIDSBulletin.pdf] [Accessed on 6th June, 2011].

culture to culture[11]. The World Health Organization (2008) says that gender, "Refers to women's and men's roles and responsibilities that are socially determined. Gender is related to how we are perceived and expected to think and act as women and men because of the way society is organized, not because of our biological differences"[12]. Thus, Gender is socially constructed and it sets rules or expectations of the society as to what a boy should do and what a girl should do.

Parker (2007), defines the term 'gender', as the diverse roles that are played by both men and women in a society or a community. These roles played are determined by various cultural, social and economic factors and they vary with from culture to culture and country to country. Rowbotham and Mitter (1995), observe that the term 'gender' has multiple meanings and is affected by a set of compound social relationships. Gender roles are not static and they are prone to change over a certain period of time.

Before engaging on a discussion on gender and ICT, it is necessary to clarify the meaning of these terms. According to Wajcman (1996), technology has three different levels of meaning. Firstly, 'technology' speaks of what people know and how to use it, repair it, design it and make it. Secondly, 'technology' refers to various human activities and practices such as computer programming, and the like. Thirdly, 'technology' also deals with the hardware or the physical objects such as computers or cars. Mitter and Rowbotham (1995), differentiate 'information technology' and say that they are a set of technologies that not only stores or transmits information but also processes it. At the core of information technology is computers and software. According to Riano (1994), the term 'communications' indicates a social system of commonly shared signs and meanings which binds people together into a group, a community, or a culture.

ICT AND WOMEN

Social development at the individual and collective level is essentially reliant on 'knowledge' through information sharing, transfer of skills and expansion of technology. This is also a

[11] Available online on:[http://www.sagepub.com/newman4study/resources/mead1.htm] [Accessed on 30th September, 2010].
[12] Available online on :
[http://www.wpro.who.int/publications/docs/Foundational_module_on_gender.pdf][Accessed on30th September 2010] .

passageway for the emerging process of globalization. In the present situation, ICT in all its different forms is playing a fundamental role in human development at not only the community and national level but also at the international levels as well[13]. But due to the unequal distribution of IT within societies and across the world is resulting in a "digital divide" between those who have access to information resources and those who do not. Majority of the women in the developing countries are in the bottom part of the divide. Women's lower level of literacy and education compared to men as well as the pessimistic attitudes towards girls accomplishments in science and technology, contribute heavily to the gender aspect of the digital divide. According to the 2004 report by the Cisco Learning Institute, women comprise only 23% of India's internet users[14].

This gendered digital divide in India is categorized by low levels of access to technologies. Other factors such as poverty, lack of computer literacy and language barriers are also some of the factors which act as hurdles to the access of ICT infrastructure, especially in developing countries like India. But in the absence of access to information technology, its significance and the ability to use it for social and economic gain cannot be well understood. Women in the developing countries will be further marginalized from the mainstream of their communities in their countries, and also across the world.

Huyer and Carr (2002), prioritize the importance of ICT for women. They say that women's successful contact to Information and Communication Technologies can help them attain improved participation in production and thereby help them in contributing further to economic development. Their article also looks at the present situation of women and the digital divide and how ICT can play a very significant function in supporting the social and economic development of women and help them in catering to their livelihood needs.

Gopalakrishnan (2008), highlights in his book how development in the field of science and technology have not only changed the way we live, work, travel and communicate, but also have unbelievably affected the economic and social structures, human attitudes, health, politics, and belief systems among others. He further says that, while this has benefited us in numerous ways, it has also brought about new challenges along with it. This book not only

[13] Available online on:[http://www.ifuw.org/seminars/2007/jain.pdf] [Accessed on 8th October 2010].

[14] Ibid.

looks at the history and advancement of the scientific revolution, it also highlights the physical, political and social effects of the industrial revolution, developments in the field of medicine and biotechnology along with the promises and problems that it has carried along with it.

Mc Carthy and Wright (2004), in their book 'Technology as Experience' talk of technology as an essential part of our lives. The authors stress on the fact as to how technology has got intertwined in our day-to-day life and we not only use it but rather live with it. The interaction with technology has involved us emotionally, intellectually, and physically. This is the reason as to why, those who design, use and estimate the communication systems should be able to understand and analyse peoples lived experience with technology. The authors also say that, while there is a great deal of concern with people's experience in human-computer interaction and related fields, both in theory and practise, it is often unclear what is usually meant by the idea. This book also provides fundamentals for a clearer analysis of user experience by developing a way of looking at technology as experience. The authors provide a new way of visualising experience with technology which is innovative, open, and relational. The new way of seeing technology that is provided by the authors suggests that we have a role or part to play in providing shape to a world that is always open and on-going. Moreover, by seeing technology as participating in felt experience we understand the extensiveness of its potential.

Smith and Marx (1994), in their book 'Does Technology Drive History? The Dilemma of Technological Determinism', discuss how technology's power is a crucial agent of change and the inventions made or which are introduced into the society is depicted taking on a life of its own. They highlighted Karl Marx's statement: "the hand mill gives the society with the feudal lord and the steam mill gives the industrial capitalists". They say that technologies are not autonomous but social products, susceptible to democratic controls. This book points out the complexities of and variations in technology-society interactions throughout history. The debate as to whether technology is fully responsible for human control goes on.

Smith and Marx's book also discusses about The Political and Feminists Dimensions of technological determinism by Rosalyn Williams. The Author is greatly disturbed by the argument that technology is inherently rational because it overlooks the fact that technology can be and are often designed for authoritarian purposes of control and domination. She

further says that there is a need to understand the motives behind the construction of powerfully determinative technologies. Women who are responsible for providing their labour in the creation of various technologies which are supposed to be impartial and peaceful in nature, are themselves excluded from enjoying the fruits of their labour because the actual control lies with the men.

Mitter and Rowbotham (1995), in their collection of essays explore the impact of Information Technology on women's employment and the nature of women's work in the third world countries. The authors discuss about the challenges faced by women, along with their responses and organizing strategies, as they adjust to new technologies in less prosperous communities. The roles that family, ideology, state policies and trade unions can play in the distribution of information and technology-related employment among women and men has also been highlighted and discussed by the authors. Some chapters highlight the differences in the interests and needs of different groups of women, highlighting the concept of feminine idea of technology and science. The book also offers a critique of postmodernism and eco-feminism and provides ways in which modern technologies could promote gender equality in the developing world.

While looking at the impact of Information Technology on the functioning lives of women in the third world, this book tries to restore the imbalance in the literature, which has so far only tended to focus mainly on the experiences of first world countries instead of the third world countries.

The above collection of essays gain importance in the context of women and ICT in Odisha because, this book talks of promoting gender equality in the developing nation with the help of modern technologies. Odisha has already taken a step for development by the implementation of the ICT Policy of 2004 and technology based development is very essential in today's scenario where India is still lagging behind and each and every state of the country needs to give it a serious thought for overall development of the nation at large.

Ahmed (1985), in his book "Technology and Rural Women: Conceptual and Empirical Issues", highlights on the subject of technological change which still requires careful handling and remains complicated despite several years of economic research on processes of innovation. This book also talks about the ILO World Employment Conference (1978), which

recommended in its Programme of Action of Basic Needs that 'special emphasis be placed in developing countries on promoting the status, education, development and employment of women' and 'that the work burden and drudgery of women be relieved by improving their working and living conditions and providing more resources for investment in favour of women in rural areas'. Similarly, the 1980 World Conference of the United Nations Decade for Women (Copenhagen) expressed concern about the frequently negative impact of technological advances on women's employment opportunities and living conditions. The book speaks of two ways of approaching the problem of technical change, namely, to formulate a conceptual or theoretical frame work and then test it with available empirical facts, or to observe facts as they are and try to draw conclusions about the nature and character of the underlying analytical and conceptual frame work. This volume follows both approaches, although it tends to opt for the second approach rather than the first.

The volume contributes to work on technology and rural women essentially at three levels. First, it attempts to establish a theoretical and conceptual frame work for research relating to this field. Secondly, it helps to formulate an analytical frame work on the basis of a review of cross-country data. Thirdly, it provides policy insights and guidelines for the formulation of concrete programmes and projects for promoting technologies for rural women in the third world countries.

Rural women need special attention and importance as they are geographically segregated from the urban set up where majority of the development takes place. Reaching out to the rural folks is an essential task of the communication mediums. It helps in bridging the digital divide to a great extent by reaching out to the rural masses especially rural women who face further exclusion, not only because of their geographical location but also because of their gender.

Dalal (2006), talks about the concept of gender equality which has become an increasing concern all throughout the world. Gender equality has now achieved new dimensions with the arrival of Information and Communication Technology (ICT). He argued that ICT has a prospective to bring about development for a nation. It can reduce various problems, limit trade distractions, eliminate poverty, empower the weaker sections of the society including women, etc. He says that it is possible only if a nation follows effective ICT strategies and

policies. He focuses on setting out priorities particularly to those areas where we are lagging far behind. The best example of such an area is the unequal access of ICT to women.

Dalal, further states that the arrival of ICT has altered the worldwide scenario and many unfamiliar areas are now open for probe and research. It is ultimately upto us to utilise the benefits to the maximum possible extent. Dalal(ibid), further says that the same can also be attuned as per the needs and requirement of women in India. He gives importance to the geographical location as well which plays an important role. This will motivate even the traditional and orthodox families to allow the women to participate and use ICT from their respective homes. He says that, in India there are a large number of "women entrepreneurs" who are very capable of making their mark at the universal level. However, there is a lack of awareness and provision of facilities which are absent in many a times. The national policies and strategies have not yet considered this unfamiliar potential of knowledge inputs by these women. There is a need for simple training and awareness programmes which are sufficient to make big differences. There is a need to encourage the establishment of "Small and Medium Enterprises" (SMEs), Small Scale Industries (SSIs), etc.

Mitter (2004), in her article evaluates the problems of ICT related globalization from the perspectives of women of poorer countries. It does so by documenting the opportunities and challenges that women of the developing world encounter in the global digital economy. It tries to assess the impact of networking technologies on the lives of working women as in call centers and the like. The discussion of economic empowerment with the use of ICT, of disadvantaged groups such as women, is the theme of the article. The article, hence, refers to the growing anxieties, as articulated in anti-globalization movements. The basic reason of such anxieties, particularly in the South, lie in the hegemonic nature of the North, not only in technologies but also in trade as well. The article focuses on the visions and concerns of women of the developing world regarding ICTs and digital trade in communities that frequently lack basics such as electricity and clean water. The article also talks for the inclusion of women's groups in policy dialogues for evaluating the significance of ICT-driven globalization in the developing world. The domination of the North refers to the supremacy of the developed nations over the developing nations(South). The same happens in the case of Odisha as well. Odisha, being one of the poorest states of our country lags behind from the developmental scenario as compared to other developed states. Various social, cultural and political are also responsible for this. Odisha is rich in natural resources, flaura and fauna but

the government of Odisha has not been able to successfully benefit out of it. There are many unexplored areas in Odisha which could have otherwise become important tourist destinations but remain invisible either because of lack of access or because of lack of government intervention in carrying out the development work.

Lallana (2004), focuses on the rising importance of Information and Communication Technologies (ICTs) such as telephones, computers, television, radio and other ever-present communication devices that are rapidly becoming essential apparatus of our everyday lives. ICT use is obvious and significant even in developing countries. Farmers can access immediate information on weather, small enterprises are using ICTs to cut costs, and a growing number of communities are getting connected online. Lallana(ibid), also points out the fact that, ICTs have been used successfully to assist in poverty eradication programmes, health services, long distance education, business, preserving religious texts, libraries and in almost every other imaginable sector. ICTs are helpful in the development of countries in the present century. They allow nations to address development goals and assist them in achieving these goals faster and more efficiently. He says that, due to this rising and important role of ICTs, we are witnessing improvements in infrastructures, content delivery and access, capacities and new national policies relating to the role of ICTs.

His study, 'An Overview of ICT Policies and e-Strategies of Select Asian Economies', makes its mark at the right time when countries in the region are hopeful of learning from each other as they include ICT strategies into their development agendas. The policy is planned to provide policy-makers the required tools, information and knowledge to make possible the formulation and adoption of ICT policies and e-strategies.

In this study it has been established that India is the apparent leader in ICT development in this group. This is because, 1971 onwards, it has already established a Department of Electronics (DoE), which is responsible for recommending and implementing policies for the country's IT sector. However, in the early 1990s, the government introduced far-reaching economic reforms that led to the reorganization of the Information and Communications sectors. During the 10th Five-Year Plan, the objectives identified for the IT sector were:

- To ensure the continued growth of software and IT-enabled services and also to increase the share of India in the international IT market as well as to increase the domestic market sphere.
- To establish a policy guideline which will make India a major force in the hardware manufacturing sector.
- To use IT in the field of governance.
- To check the digital divide.
- To encourage the development of software in Indian languages and
- To develop the quality of human resources, skills, and research and development (R&D) in the sector.

Best and Maier (2007), in their article, explore how women use and observe Information Technology in five villages in rural Tamil Nadu, India. The study analyses the outcomes by the use of structured in-depth interviews with seventeen women Internet kiosk users and twenty-two women who never used the Internet before. The study intended to thoroughly document the information and communication needs of women in rural South India as expressed by the women themselves. They identified several critical issues that must be taken into account in the design of Information and Communication Technology (ICT) projects. The findings of the study can be divided into four categories: (1) ICTs were found to be quiet beneficial by women, (2) there exists gender-specific handling patterns and perceptions of ICTs, (3) The obstacles that hinder the use of ICT are often structural (time, location, illiteracy) and not personal and (4) It was also found that, manifestations of gender awareness associates itself with perceptions of hindrances to ICT use. Information and Communication Technologies hold great promise in the path of development and poverty reduction, but in order to ensure that the entire population reaps the benefits of these technologies a clear understanding of the specific needs of women and other disadvantaged groups is essential.

In association with the Pan Asia, M.S. Swaminathan Research Foundation (2004), started with the project on the impact of ICT on Poverty Alleviation in Rural Pondicherry. To carry out this study, seven Village Knowledge Centres (VKCs) were created in rural Pondicherry, in order to provide rural communities with access to internet and training on ICTs. The research came up with the results that these VKCs had made a considerably positive impact on the lives of the villagers. Later in 2001, IDRC also approved the second phase of the

project, in order to bring better connectivity to the villages, and to measure the potential sustainability of the project. In the past few years there have been many new digital opportunities that have emerged in the form of vigorous, low-cost technologies, as well as in the form of new ICT applications suitable for rural areas. The MSSRF's projects which have already been recognized as a successful, well-organized network of VKCs, complete with the infrastructure, local content, and human resources and are keen on testing these new technologies. The goal of the third phase of this project is to determine whether new, innovative ICTs can bring better economic sustainability to the existing project, and at the same time, add to further improvements in the education and health sector as well.

Lavanya R (2009), in her paper tries to analyse how far training programme through Information and Communication Technology can help in the empowerment of women. The paper is divided into two stages. First, it analyses the training project "Building skills of self help group women in establishing and maintaining information kiosks (stalls, cubicle or booth) through a case study. The second stage of the paper finds out the actual status of the trained women after a period of two years. The result of the study was that the training programme when given through colleges and university had more impact than others. It helped them to gain computer knowledge with ease. Even though the training was excellent, not even a single woman recognized or maintained a kiosk. Thus giving training alone does not satisfy the need.

Upadhyaya (2008), talks about the importance of education and the requirement for good quality education with the help of Information Technology. The author says that in the age of electronic, development of methods, process of information, communication and knowledge are taking place. These pioneering changes require new knowledge and skill for effective implementation and dissemination of Information Technology which is the challenging task. Upadhyaya (ibid), says that how Information Technology use has emerged from the past to present and in its further use in the future. The practice, significance, diversified fields, the different users of Information Technology are well explained. The socio–economic impact has also been defined in this article. The author talks about the cost efficient tools, the training and importance of good education to the young generation engaging themselves in the different higher educational institutions in India is the main characteristic of the study. The Information Technology usage as the main plan for developing a nation is the focus of the study. The disadvantages and lack of government support to higher educational

institutions are the prominent features of this study. How these higher educational institutions are taking the help of the Information Technology for the youths is the key for the expansion and survival of the higher educational institutions in keeping pace with the experience and quality of education and survival of the fittest is the hymn in today's dynamic environment.

Bhatnagar(2000), in his case study volume highlights various applications of Information and Communication Technology (ICT) that have made a difference in the provision of services or products in rural areas in India. Each case is looked after by the administrators who have piloted and established the projects and who describe both the opportunities and challenges in the dispersal of ICT. In systematically documenting these experiences, the author aimed in highlighting thriving strategies for using ICT to create a developmental impact, and to provide recommendations from the view point of actual practitioners and for the establishing various ICT applications in the rural areas in India.

According to the author, a considerable number of ICT applications have been implemented and well-recorded in India at the district level. The main focal point of this book is on applications where there is much greater contact with citizens, that is, at the lower level. Bhatnagar(ibid), further says that, ICT applications in the development of rural areas are classified here as those that: provide decision support to public administrators for improving, planning and monitoring of developmental programmes. It also helps in improving services to citizens and brings transparency, helps in empowering citizens through access to information and knowledge and also in expanding development of the private sector.

Nabanna Information Network for Rural Women (2011)[15], explores inventive uses of databases in the local language with the hope of educating and empowering economically poor women in the rural regions of West Bengal. The importance is on building a structure for sharing of information, creation of content, and off-line information distribution. Through collaboration with the United Nations Educational, Scientific and Cultural Organization (UNESCO), Change Initiatives has devised strategies to allow even the uneducated to access Information and Communication Technology (ICT) contents. In the ongoing process, Change Initiatives expects to create a strong network of women with the voice and capacity to give their full participation in the society.

[15] Available online on[http://www.comminit.com/?q=ict-4-development/node/127495(Accessed on 12th February, 2010)].

According to the organizers of the network scheme, women in many rural and semi-rural areas of Bengal do not have planned local communication networks that can help in promoting access to information or provide spaces for sharing information and knowledge. As a result, many women do not know how to or are not able to meet even their basic needs. Thus, in the early phases of Nabanna's development, the main focus was on the use of ICTs to enable women in Bengal to build their own local information network. The justification behind this process was that individual women who had direct access to the tools would need to share their knowledge and skills with others who do not, thus spreading information and reaching the others. By combining technological and social networks, Nabanna has worked to reach out to a large number of women and provides local collection and dispersion of information and knowledge. The research carried out by Change Initiatives demonstrated that better access to ICT tools could speed up development. But the problems like lack of electricity and connectivity in the remote areas of India makes it difficult for people to access ICT[16].

The above study also puts forth that in the process of learning to use computers together at the ICT centre, women often open up about their personal problem, which creates a sense of togetherness and helps in developing leadership qualities. ICT also increases women's contribution not only in the household but also in community and the market as well. Nabanna Information Network for Rural Women (ibid), also suggests that, in the household, the information that is obtained through ICT helps them to negotiate and strike a deal with their family members. Thus, women have improved their togetherness and experienced combined empowerment through the Nabanna network. This togetherness in the community empowers women as a group and allows them a greater voice in the community and hence increases their influence on local government for implementing projects to promote maternal health, stressing on the proper education and sanitation facilities for girls. However, although the Nabanna project has tried to include marginalized women in the information network, but illiterate and native women still have difficulty in accessing ICTs.

The most significant development issues relating to ICT and growth of knowledge societies has to be approached from both global as well as local perspectives through the joint

[16] Ibid.

participation of the public, private, the Panchayati Raj Institutions (the three-tier local government system), non-governmental organizations as well as academic circles and the members of the civil society. ICT models rely on innovations, customization and people's participation. Establishment of creative approaches to the use of ICT in the areas of local governance, e-commerce, e-advocacy, e-income generation activities could accumulate unlimited benefits to both rural and urban communities. Equal access to ICT and independence to receive and produce the information relevant to their concerns and perspectives are hence very critical issues for them. ICT strategies have the capability to succeed in bridging the poverty gap only if there is an actual effort towards formulation of enabling policy frame works and avenues which create opportunities and incentives for them to participate and benefit.

The Census (2011), says that Odisha has a total of 30 districts, spread over 47000 villages. The total population of Odisha is 41,947,358. The literacy rate of Odisha is 73.45%. Population of marginalized and underprivileged communities like tribals (ST) and dalits (SC) forms 38 percent of total population of the State. About 60 percent of the villages are not yet connected with all-weather roads. Agriculture is the basis of the economy in Odisha. Lack of access to information, social and economic services, facilities and goods are some of the major factors that contribute to the backwardness and poverty of the rural communities. Based on the situation and need of recently developed Information and Communication Technology, an all-inclusive model 'Community Information Centre' has been designed by IRMA-India and implemented as a pilot intervention in a cluster of rural villages in the state of Odisha with support from Connected Nation in October 2007[17].

Nidheesh K B (2008), talks of the aim of the Kudumbashree scheme which is a project of the Government of Kerala and to improve the standard of living of poor women living in rural areas by setting up micro-credit and productive enterprises. The project has opened a new series of expected events in development history. Rural women, who were regarded as voiceless and powerless have started recognising the inner strength, opportunities for growth and their role in reshaping their own destiny. The process of empowerment became the indication to their children, their families and societies at large. Kudumbashree proved that women's empowerment is the best strategy for poverty eradication. Nidheesh K B (ibid), says

[17] Available online on :[http://www.docstoc.com/docs/46129772/Community-Information-Centre_-Enabling-Technology-and-Empowering- (Accessed on12th August2010)].

that, poverty is a crucial problem being faced by all developing and underdeveloped countries in the modern world. It is felt that the problem of poverty can be solved through intensive efforts in rural areas. The objectives of this project were to assess the growth of Kudumbashree activities in rural areas, to determine whether there is any significant change in rural people's life style, to assess how they are utilizing their funds and to check the efficiency of their operations.

He further highlights on the fact as to how, poor and rural women of the state of Kerala have become active participants in the planning and implementation process of various anti poverty programmes. By participating in various income generating as well as developmental activities, the morale and confidence of these women has become very high. The strategy of participation and empowerment adopted in Kudumbashree mission ensures sustainable livelihoods to many poor rural women. He says that, Kudumbashree has gained national and international acclamation as an ideal and workable model of participatory development for eradicating poverty.

Parveen (2008), examines the extent of convenience of rural women to the use of several productive resources. The results of the study reveals that the women had better opportunities for rearing livestock and capital availability. However, their access to extension services, training, technologies, institutions, land and production inputs were limited. Lack of technical knowledge and land ownership, heavy household chores and some socio-cultural constraints like restricted mobility and male resistance hindered women's access to productive resources. The study ends with a series of suggestions for rural women's empowerment. Special emphasis was given to forming social capital among rural women by various development actors which could increase productive resources under women's control.

Kwapong (2008), in the article "ICTs and Adult Education for Empowerment of Rural Women in Africa", bring about the fact that the majority of the poor live in rural areas of which 70% are women. In spite of their wonderful contribution to development, rural women in Africa continue to suffer invisibility, poor health, low levels of formal education and income and limited access to infrastructural development. They also dominate in small-scale agriculture. She says that, the reports indicate that rural women have been key players in solving major issues on the development agenda, which includes the need to manage the environment in a sustainable manner, control the growing rate of population and

urbanization, ensure food security, provide basic needs with regard to health, promote education and literacy and eliminate poverty. Kwapong (ibid), also says that, there is tremendous potential in using ICTs and adult education for the empowerment of rural women in sub-Saharan Africa and other developing societies. ICT use has come to stay and the main concern now is how to harness it for basic adult learning in developing countries in Africa. Socio-economic characteristics and cost could be a determining factor for adopting an ICT protocol for adult education among rural women according to the author. To support women to make the best of modern information for their personal development, their willingness to pay for the use of an ICT facility based on their socio-economic characteristics needs to be assessed as highlighted by the author. There is also the issue of women being technology unfriendly. This calls for making Information Technology women friendly in the light of adult educational methodologies.

Patel and Parmentier (2005), in their study on women engineers in India highlight that as women in India enter the quickly increasing Information Technology (IT) workforce, it could be predicted that their active participation in this sector will change their socio-economic status within the employing organization and the communities in which they reside. It is frequently expected that women's participation in the professional realm will contribute to a collapse of traditional gender roles. According to the authors, the data very clearly shows that women are working in the IT sector in India in increasing numbers. However, data collected in 1992 and again in 2002 by the Indian Institute of Technology suggests that not only does women's participation fail to occur at the same speed as IT expansion, but that their participation is based on a continuation of traditional gender roles, which places women on the fringe of an employing organization. Patel and Parmentier (ibid), question the concept of technological determinism and their paper examines how technology and its development can familiarize itself to the existing social structure. The persistence of such gender divides carry on the notion of gender isolation and do not improve women's socio-economic and political status, nor provide equal participation in the knowledge economy.

RESEARCH QUESTIONS

1. What is the role played by ICTs in the lives of women in rural and urban areas towards socio-economic awareness and empowerment?
2. What is the extent of digital divide existing between rural and urban women due to differential provisioning and forms of patriarchy in both the regions?

OBJECTIVES OF THE STUDY

1. To study and analyse the concept of Information and Communication Technology, its origin, objectives and roles.

2. To critically analyse and review the policy issues of Information and Communication Technology in bridging the digital divide and empowering rural and urban women.

3. To study and understand the use of ICTs by rural and urban women in Khurda and Ganjam District.

4. To study the impact of ICTs on the socio-economic upliftment of women in supporting their livelihood needs thereby giving them a voice in the society.

5. To find out the extent to which the ICTs space is engendered. Since, gender falls under the category of exclusion and ICT can play an inclusive role to reduce this exclusion to a certain extent, the process of exclusion and the inclusive measures of ICT needs to be studied.

RATIONALE FOR CHOOSING THE FIELD

Odisha, the ninth largest state of India is one of the most backward states amongst the non special states[18]. The total population of Odisha is 41,947,358. The total literacy rate of Odisha is 73.45% and the female literacy rate is 64.36% to that of 82.40% for males. It ranks the last

[18] Non-special states are those who do not get special benefits like higher share in the Union Governments resource allocation, excise duty concessions and the like. Available online on: [http://www.business-standard.com/article/economy-policy/what-a-special-category-state-means-113031900031_1.html] [Accessed on 20th June, 2013].

in the economic development among the fifteen non-special states[19] .The government of Odisha has come up with the ICT policy in the year 2004, acknowledging the importance of ICT as a tool for massive development in the state of Odisha. The policy has an image to reduce the digital divide which will bring about a constructive change in all walks of life and society, resulting in ease and convenience in transaction, providing employment opportunities to the educated youth and ushering higher economic growth in a specific time frame. Hence, it becomes important to study the impact of the policy which has been implemented by the government of Odisha.

Odisha Computer Application Centre(OCAC) in Bhubaneswar and Information Resource Management Association- India(IRMA- India) in Bhubaneswar are the two organisations that have been selected for the study. In order to look at the work done by IRMA- India in the rural villages by the establishment of Community Information Centres, Badhinuapalli and Kanheipur CIC of Khalikote block, Ganjam district was chosen. Badhinuapalli CIC covers 12 villages and 3 Gram Panchayats namely, (a) Badhinuapalli Gram Panchayat covering 10 villages, (b) Bikrampur Gram Panchayat covering 8 villages and (c) Tulasipur Gram Panchayat covering 4 villages.

Kanheipur CIC covers 10 villages and 2 Gram Panchayats namely, (a) Kanheipur Gram Panchayat covering 9 villages and (b) Kairasi Gram Panchayat covering 1 village. These 2 CICs were selected because IRMA- India established a pilot project in Badhinuapalli and Kanheipur village of Khalikote block, Ganjam district which is the first of its kind in Odisha.

Bhubaneswar has been selected as the study site as it is the capital city of Odisha which makes it the hub of companies, ICT institutions etc. and people from all over the state come to Bhubaneswar for job opportunities which makes it all the more convenient to find respondents belonging to varied sections, regions and background making the data more relevant and useful. Nayapalli-6 area of Bhubaneswar was selected to study the urban respondents. This area of Bhubaneswar was chosen because it is located within 2kms radius distance from OCAC office. It is a flourishing area with a mixed population which consists of both residential as well as commercial occupants.

[19] Available online on[http://censusindia.gov.in/2011-prov-results/data_files/orissa/Provisional%20Population%20Total%20Orissa-Book.pdf] [Accessed on 13th June,2013].

This proposed study aims at understanding the impact of ICT on women in general, as there has been no study on this area especially in the state of Odisha which is the most backward state. In the new world of science and technological advancement where every nation and state is striving for a higher economic growth the flow of information is vital. Thus harnessing the benefits of the ICT for the growth and development of women who are half the population of the world will be of immense help in bringing women in par with men. This proposed research work also will open up more areas for further research in relation to women and technology.

RESEARCH METHODOLOGY

This study is structured in such a way that both secondary and primary sources of data collection have been used. For secondary data, the study is based on books, articles in refereed journals, reports prepared by different organisations as well as government reports and policies and other published works have been referred. For primary data, a field work has been carried out using a structured questionnaire and by interview method with the help of an interview schedule. Two different sets of questionnaires were designed for the women respondents and the organisation staff. They included both open ended and closed ended questions. Both qualitative and quantitative tools of data collection were used.

IRMA- India has 19 staff members and all the 19 staff members were interviewed. Access to villages was made through CICs at Badhinuapalli and Kanheipur. 100 rural women were interviewed and the respondents were accessed using Snowball Sampling Technique representing the number of villages. OCAC has 59 staff members and 30 staff were interviewed using Snowball Sampling Technique. Nayapalli-6 area was identified for data collection. Simple Random Sampling was used for selection of the respondents. Every 8^{th} house of 550 houses was approached. The details of the Nayapalli-6 area were found from the Nayapalli Association office. It consists of a total of 558 plots out of which 16 are D- type plots. There are 11 streets and 5 lanes. Out of the total 558 plots, 550 are residential houses. There are many commercial plots, hostels, shops, internet- cafe's, banks, temples, ATM's, computer training institutes, market complex, etc.. A total of 70 respondents were interviewed and data was collected. The data was entered using SPSS Software and then analysed.

In order to strengthen the research four Case Studies were also carried out. 2 women, 1 each from Badhinuapalli village and Kaheipur were identified for the Case Studies. 2 women respondents from the N- 6 area of Bhubaneswar were also selected for the Case Study.

CHAPTERISATION

This study is organised into six chapters. The first or the "**Introductory**" chapter discusses about the concept of Information and Communication Technology and the general impact of Information Communication Technology (ICT) all around the world which is being used as an effective tool for the growth of the economy. The chapter then discusses the importance of ICT as a mechanism for better governance in India as a result of which many states across the country have announced ICT policies so that India's position can be strengthened in the software-led ICT sector in the world. This chapter also talks about the role of Odisha government through its ICT Policy of 2004 to provide opportunities to the people of Odisha in accessing technology. This chapter also includes a detailed yet selective review of literature which focuses on the role and impact of ICT on women and thereby highlights on various studies supporting the inclusive role played by ICT. The research questions, objectives and research methodology have also been outlined.

Chapter two, "**ICT, Gender and Exclusion: A Conceptual Understanding**", introduces the concept of ICT, Gender and Exclusion and how these three concepts can be linked together because gender falls under the category of exclusion and ICT can play an inclusive role to reduce this exclusion to a certain extent . Apart from citing various definitions by various scholars on the concepts, this chapter will also bring more clarity on the roles and functions thereby providing a general understanding of the concepts.

The third chapter, "**Feminism and Women Empowerment**" highlights on the concept of Feminism and Women Empowerment and tries to discuss as to how feminists talk of empowering women.

The fourth chapter, "**Policies and Programmes on ICT: An Overview**" is a review of the New Telecom Policy, 2012 and Odisha State ICT Policy, 2004. The chapter looks at the constitutional provisions and steps taken by the government for the welfare of the women folk through the introduction of ICT institutions and provision of various ICT-related facilities and bridging the digital divide. This chapter also highlights the details of the two organisations OCAC and IRMA- India which have been identified for carrying out the study.

The fifth chapter**,** "**Experiences from the field**", will study and analyse the data collected. It deals with the study area and also highlights the socio-economic background of the respondents and their use of ICTs in their day- to- day life at home and at work. This chapter also deals with the socio-economic background of women in general in India and Odisha in particular. It then focuses on the impact of ICT in making the women independent economically as well as in bringing a drastic change in their social life as well. The field study gives a clear scenario regarding the socio-economic status of women through the help of ICT in Odisha. Since gender equity has not been achieved even in this twenty-first century and women still continue to be one of the most vulnerable sections of the society, so their socio-economic status has to be improved in order to empower them to certain extent. ICT plays an important and constructive role in doing so. Hence, the impact of ICT and its impact on women has been thoroughly dealt in this chapter.

The sixth and the "**Concluding**" chapter recapitulates the themes of the first six chapters of the research work coupled with the researcher's assessments and arguments.

In order to analyse the impact of Information and Communication Technology on the global and local scenario, the concept of ICT needs more clarification. To find out the role played by ICT for the development of women in general and rural women in particular, first the concept of ICT needs to be clearly understood. Hence, the next chapter will be dealing in exploring the concept of ICT and its emergence, its role and its objectives and its impact on women.

CHAPTER- II

ICT, GENDER AND EXCLUSION: CONCEPTUAL UNDERSTANDING

The ever expanding subject matter of social exclusion has opened the door for further research is explaining the various forms of social exclusion in different social systems in the world. Even though it is a new concept it has become a very important subject because of its ability to explain the social behaviour in different ways which can be of further use in understanding, analysing and designing a new social order. This chapter aims at throwing light on the concepts of social exclusion, gender and ICT and how gender is a category of exclusion and through the inclusive ICT mechanisms, this exclusion can be reduced to a certain extent.

ORIGIN OF SOCIAL EXCLUSION

Lynn (2006), says that social exclusion is a widely developed concept as popularised by European Union (EU). The term however traces its origin to France, used to refer to the problems of the mass unemployed poor in the post industrialisation period. Weak growth, high unemployment and persistent inequalities needed to be addressed in short term for, the overall social development was the widespread idea of EU to overcome the various forms of social disadvantages. Thus, in post 1980's the concept was taken into account in European Union's social policy discourse; this trend hoisted concerns about the deprived sections of the given society in a holistic way. This approach meant to solve the multidimensional deprivations of the people, who are under the clutches of poverty and allied misfits, lying out of the main stream.

He also says that, one should go back to the 19th century in the process of searching the literature roots for social exclusion. The earlier reference of this concept can be credited to Max Weber, where he described society as 'Social Closure' in which, one group "… secure(s) for itself a privileged position [in society] at the expense of some other group through a process of subordination" (Parkin 1979 in Todman 2004:2). Lynn(ibid), further elaborates that after the Second World War, industrialization and globalization have given rise to a new type of deprivation, which affected the middle class and working class enormously. He describes as to how in France it produced, wide range of unemployment due to negligence by the welfare state. And it is also recognized that the unemployment is one of the reasons for poverty which is not just about income, but also talks about social networks. Exclusion of these unemployed gave birth to the concept of, 'social exclusion'. Arjan de

Haan (1999), says that the first use of the term can be credited to Lenoir in 1974(*les exclus*). It was also recognised that the popularity of new term was partly the result of the unpopularity in France of the (British) concept of poverty. Brien et.al (1997), said that the term 'excluded' was originally coined to describe those who fell outside the contributory 'safety-net'

As a subject, the concept of social exclusion originated in Europe during the 70s. Haan, Sen, Silver and other scholars have pointed out that the credit of first using the term "social exclusion" goes to the French scholar named Rene Lenoir. Lenoir's excluded included a wide variety of people, not only the poor, but also the handicapped, suicidal and aged people, abused children, substance abusers, etc..It has been very useful in understanding other kinds of marginalization such as women, racism, poverty, stigmatization, disability etc. In India, the term has been used mostly in explaining the caste system, women, children, disability and various other indigenous tribal groups who are still left away from the mainstream. Ever since the term social exclusion first gained usage in France in the 1970s, it has alongside poverty and inequality, become one of the most important concepts in social policy debates in Europe. The debate has now gained wide currency in India too.

Haan (1999), highlighted on the idea of social exclusion which has recently been used to cover a large variety of exclusions, particularly important in Asia. Social exclusion basically focuses on the process of deprivation, which excludes individuals or groups from partially or fully participating in the society in which they live. Social exclusion is a multi-dimensional concept, as it covers different forms of social disadvantages like economic, social, political and cultural, which exists at different levels in different nations. Prasad (2003), says that the concept of social exclusion is seen as covering a wide range of social and economic problems and they include various groups as well like the mentally and physically handicapped, suicidal people, aged invalids, abused children, delinquents, single parents, multi-problem households and other social problems.

Haan's definition of social exclusion clearly explains that any individual or groups who are not allowed partially or completely from a holistic participation in the society in which they live will be considered to be socially excluded. The social exclusion concept is, as Hilary Silver (2010), writes is, "associated with a variety of terms like superfluity, irrelevance, marginality, foreigners, altered, closure, disaffiliation, dispossession, deprivation, and

destitution and social inclusion is about insertion, integration, citizenship or solidarity"[1]. Hilary Silver too defines social exclusion using various terms, which basically points on separation on leasing out in a negative sense and social inclusion is all bringing together and it has a positive correlation. For some scholars the term social exclusion is multidimensional and dynamic in character". Evans (1998) and Commins (1993), have given a clear explanation of this and present four dimensions i.e. exclusion from: civic integration, a failure of democratic and legal systems, the labour market, welfare state provision, family and community.

Because of variedness of the concept through circumstances, various scholars provided different views with regard to definition. According to the European Commission (2008), the European Union concept of social exclusion is "a process whereby certain individuals are pushed to the edge of society and prevented from participating fully by virtue of their poverty, or lack of basic competencies and lifelong learning opportunities, or as a result of discrimination. This distances them from job, income and education and training opportunities, as well as social and community networks and activities. They have little access to power and decision making bodies and thus feel powerless and unable to take control over the decisions that affect their day to day lives"[2].

The marginalised groups like the SC's, ST's, women, children, aged people, disabled people and the like fall as prey in the hands of those who are in an advantageous position than them. They exploit these groups for their own benefit and gradually push these groups further to the brink of poverty and social exclusion. Sometimes individuals are excluded by a single individual and sometimes by a larger group.

According to the Social Exclusion Unit (2004), poverty and low income, unemployment, poor educational achievement, poor mental or physical health, family breakdown and poor parenting, poor housing and homelessness, discrimination, crime and living in a underprivileged area are some of the exact reasons for social exclusion[3]. The risk factors for social exclusion tend to cluster in certain neighbourhoods, but not everybody at risk lives in a deprived area are the causes and consequences of social exclusion.

[1] Ibid (2003), p. 147.
[2] Available online on [http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-EP-09-001/EN/KS-EP-09-001-EN.PDF (Accessed on 23rd November. 2009)].
[3] Available online on: [webarchive.nationalarchives.gov.uk/+/.../**social_exclusion_task_force**/.../..][Accessed on 23rd November, 2010)].

One should not simply reject that natural process does not have any relation with social exclusion. Since natural causes such as famine, floods, tsunami leads to distract the lives of people from their social bonds. Destruction of their lives ultimately leads to exclusion of those sections from the main stream in terms of depriving their capabilities to access their political, cultural, social and economic life. Some studies argue that disasters are simply not natural, those are socially structured. There are plenty of arguments, which describes that society's failure to include the excluders due to the disasters creates more losses than the disaster does.

Silver (2006), elucidated that, sociologists classify disasters by type, often distinguishing between natural and technological and political disasters. Floods, earthquakes, tornadoes, hurricanes, wildfires, eruptions, famines, plagues are considered as natural disasters. On the other hand, explosion, dam breaks, blackouts, oil and toxic spills, fires, genetic mishaps, computer viruses, and accidents at nuclear power plants, chemical plants must be considered as technological disasters, where as riots, revolutions, and terrorism are about political ones. These three categories have their own abundances in terms of excluding the people. Thus, scholars should recognize that the source of the exclusion should be ignored in terms of identifying the socially excluded groups.

SOCIALLY EXCLUDED GROUPS

As the social exclusion purview occupied broad realm, almost all people get a chance to be excluded at some point in their life time. Indeed it is noticed that some people may get excluded for long time but most of the people are excluded for some time. It is also one of the important factors that social exclusion is an endless process. It may disappear here and appear in some other areas, because of its endlessness government policies should provide proper solutions to those disadvantages and should give a way to the excluded to enter into inclusive process through their participation.

According to the available literature, various scholars' have different opinions with regard to excluded. Rene Lenoir's perception of socially excluded are those who are not protected by the welfare states and are considered as social misfits. Indeed mentally, physically handicapped, the aged and invalid, drug users, delinquents, suicidal people and so on.

Haan (2001), explained about certain types of exclusions which includes landlord excluding people from access to land or housing, elite political groups excluding others from legal

rights, priests in India excluding scheduled castes from access to temples, minorities being excluded from expressing their identity, labour markets, and some trade unions exclude people from getting jobs and so on. Exclusion happens at every level of society. Lynn (2006), viewed that abandonment, ostracism, discrimination, shaming, marginalizing, segregation, confinement, imprisonment, exile and pathologizing, extermination and genocide are the methods for social exclusion, and public policy, governmental and other institutional practice, cultural values and beliefs, demographic shifts, globalization, technological innovation and organizational transformation are the agents to activate exclusion.

Barnes et al. (2002), considered exclusion as multi-dimensional drawback in the areas of housing, health, education, social relations, and participation, finding that poverty increases with living alone, but has little effect on social isolation and social relations.

Nayak (1994), highlighted that exclusion comprises of various forms, such as, exclusion from education, exclusion from housing, exclusion from property ownership, exclusion from democratic participation, exclusion from access to health services, exclusion from public goods, to name a few. In addition to these one may think in terms of gender-based exclusion, exclusion of the old and unwell individuals, exclusion of widows, and exclusion of the physically handicapped.

Social exclusion could not get more emphasis in United Nations because of the already existing term under class, which was termed recently as outer class. As poverty is one of the measurements for social exclusion, if participation in the market is one of the measurements to poverty in the world from gender perspective, women are more socially excluded, because their participation is restricted in markets in most of the traditional countries.

Gwen (1993), gave a new dimension that under class now turned through existing outer classes when mainstream kept some of the classes in the edges of the society under the ground of social misfits. Bhalla and Lapeyre (1997), viewed it in this way, the problem now is not one of disparity between the top and the bottom of the social scale (up/down) but also between those comfortable placed within society and those on the fringe (in/out) (Love M Chile, 2002:359 quoted in Bhalla and Lapeyre, 1997:415). Social exclusion not only includes those who are discriminated but also those who are placed in the society but are not in par with others. It operates not only vertically but also horizontally. Discrimination amongst the equals also falls under the category of exclusion.

Le Grand (2005), says that voluntary social exclusion also leads to destruction of the social bonds. He argues that the young man may join in gang engaged in crime totally in his own choice but ultimately it is ruining the other people's welfare. There are possibilities to illustrate that voluntary exclusion is not simply voluntary but perhaps holds lots of social, political, cultural and economic causes, which may not be visible from the outside. If a dalit boy encounters discrimination and aggression whenever he enters into upper caste society, he may decide not to enter any more in that society and go or attend the school. For instance, he may refuse a chance to go to school, which finally ruins his life in terms of lacking proper qualifications for a decent employment.

Social exclusion as a perilous and multidimensional concept, which creates allied discriminations and it is very difficult to identify from which deprivation the social exclusion operates, but we can identify the source of deprivation. Once any individual/community is socially excluded, it is very difficult in overall to find, from which deprivation the excluded is suffering; it varies from circumstances. In Silver's interpretation social exclusion is the result of monopoly paradigm where certain sections keep other sections outside. Silver (1995), in her article titled 'Social Exclusion and Social Solidarity: Three Paradigms', says that, mentally and physically handicapped, suicidal people, aged invalids, abused children, substance abuse, delinquents, single parents, multi-problem households, marginal, asocial persons, and other social misfits are considered as socially excluded. Europeans conceive social exclusion as distinct from income poverty. Whereas De George (2007) opines that child labour, environmental degradation, corruption and bribery, exploitation of workers and the widening gap between developing and developed economies could be reasons to initiate a social enterprise.

In the views of Adam Smith, like poverty, all other deprivations also have related deprivations which may result by source deprivation i.e. caste, race, gender, disability etc. Social exclusion deals against combating all these source and related deprivations. Thus, poverty is only one of the related sources of deprivation which enforces along with social exclusion. For example, being excluded from the employment may lead to other related deprivations as Adam Smith felt 'inability to appear in public without shame' (Cambell & Skinner (1976), which could also be called as social exclusion, because sometimes social exclusion creates certain situations where the affected people may not feel comfortable to appear in the public. Caste in India and race in USA are also one of the means, which are not accurately grounds for poverty but produces social exclusion. Thus, all these deprivations

which aimed to exclude certain individuals or sections are covered under the realm of social exclusion.

GENDER AND SOCIAL EXCLUSION

Gender is a concept of social exclusion because women who provide the mechanism for the birth of human beings need protection as if they are some kind of endangered species. It is well known that gender equity has not been achieved even in this twenty first century. Even in most of the democratic countries/society, equity for women seems to be a distant dream. This is in view of the women who are in every respect as abled as their male counterparts. The demand for gender equity can come after a clear definition of gender. The World Health Organization says, "the word 'gender' is used to describe the characteristics, roles and responsibilities of women and men, boys and girls, which are socially constituted. Gender is related to how we are perceived and expected to think and act as women and men because of the way society is organized, not because of our biological differences"[4] Thus, gender is socially constructed and it sets rules on expectations of the society as to what a boy should do and what a girl should do.

Gender biasness along with financial problems play major role in the neglect in provision of basic healthcare services to women of all ages. Women, as such are socialized not to attach too much importance to their health. Young girls are socialized and made to feel that ability to work is the important deciding factor for her marriage and future. Since 1971 Census, lowering sex rations have become a serious concern.[5] Large scale dowries, gender-biased attitudes and strong male preference are frequently cited as reasons for this. Strong patriarchal traditions, widespread prevalence of the dowry system and the lifelong liability of girls family to endow her with gifts throughout her life, after her marriage, connote the girl as a burden. According to the Census(2011), in India there are 933 females per 1000 males. The Census(2011), further reveals that in the rural areas the sex ratio is better compared to that of the urban areas, i.e., 946 in rural areas in contrast to only 900 females per thousand males in the urban areas[6]. This shows that in rural areas the situation is changing for the better,

[4] Available online on: [http://www.genderandhealth.ca/en/modles/nformation/introductiongenderasdeterminatofhealth-shana-03.jsp] [Accessed on 26th June, 2013].
[5] Quoted in "India 2008" (2008), published by the Additional Director General Publication Division, Ministry of Information and Broadcasting, Govt. of India, p. 11.
[6] Available online on: [http://censusindia.gov.in/Census_Data_2001/India_at_glance/fsex.aspx][Accessed on 26th June, 2013].

whereas the lowering sex ratios in the urban areas shows that the preference for a male child still holds strong.

Mukherjee (1991), gives a picture of the girl child in various fields of education, nutrition, health and employment. She writes how a girl child is often sacrificed even before she is born or made to compromise with almost everything in her life. She adds how a girl child generally eats less than her brother but works twice than her brother. Her work is not only in her own home, but also in the fields on someone else's house as well. Her fragile nutritional status along with her workload keeps her ill most of the time and makes her suffer from various diseases, infections and deficiencies. But treatment for her illness is a big question in a male dominated society where a male child is given more preference and when money is matter, then the treatment of a male child is looked at first than the female child. Women who are brought up in the patriarchal ideology neglect their own health and do not complain either.

In spite of the various protection measures given for the women right from their birth, a limited impact could be made. This can be known from the fact that in India, 49 % of the population consists of women, out of which 46% of females (22.5% of the population) are under the age of 20[7]. The female in the Indian sociological framework is only seen in the traditional role, like cooking, caring, sacrificing and giving up her requirements for others in the family. This results in discrimination against her in which sometimes she herself is also a participant and then this discrimination passes on to the females of the next generation. Hence, there is an urgent need to bring out the women from this kind of image and to look at her as an individual who has equal rights as her male counterparts. In the name of gender equity, there is a lot of discrimination going on till now in India and abroad as well. The discrimination against the girl child begins even before she is born. Manu's law holds, "through a son, a man conquers the world; through a son's son, he obtains immortality; and through a son's grandson, he gains the world of the sun"[8].

In the field of education as well, there exists an educated gender gap between the males and the females. The result of the 2011 census, show that there is an increase in the literacy rate in the country, i.e. 74.04%. But whereas the male literacy rate is 82.14% the female literacy rate

[7] Quoted in "The Girl Child in India" (1991), Suneeta Mukherjee, p. 301.
[8] Ibid (1991), p.301.

is 65.46%[9]. The conservative mentality of parents also acts as hindrance for the girls in the path of acquiring knowledge through education. If school or college is a co-education school, their parents sometimes do not like to send their girl children to the school or college while the 83rd constitutional amendment recognizes education as a fundamental right of all Indian citizens, disparities still arise. Article 46 of the Indian constitution provides for the "promotion of educational and economic interests", but inequality still persists.

India is a patriarchal country where a male child is given preference over a female child. Hence the narrow minded mentality still continues which results in the subjugation of women, female infanticides, dowry deaths, crimes against women and children, etc. The society needs to be sensitised on the negative impact of these discrimation against women and girl children, may be then a solution to this problem can be reached at.

Mukherjee (1991), in her study highlighted on the fact that in the field of employment, there also exists gender disparities. She says that, women comprise of an important part of the workforce of India, but they fall far behind men in terms of level and quality of employment. Even though the female working population is so high, they always face disadvantages under which they work. Their capacity to strike a bargain needs to be strengthened and they need to acquire better skills and training in order to overcome their various problems of unequal wages and poor working conditions etc. Gender divisions become more prominent during general unemployment. The entry of young girls into jobs becomes more questionable and it becomes more serious after a phase of experiences of joblessness. A girl is half-heartedly allowed to grow up if she survives and hence she feels discarded and makes her contribution to the family or society through her labour in the form of household work, looking after the other children in the family, performing household chores or working in someone else's house.

The traditional Indian society looks at a girl as someone who is loving, caring, sacrificing and giving up her requirements for the others in the family. A girl is usually considered to be unwanted in our male dominated society. Situation might be changing to a great extent but the problem of continuing female foeticides, abuses on girl children says that the situation is still quiet prevalent.

[9] Available online on[http://www.mapsofindia.com/census2011/literacy-rate.html(Accessed on 14th June, 2012)].

The Government of India, Ministry of Women and Child Development (2005), has taken various efforts to integrate the girl child into the mainstream of development through various schemes in Women and Child Development (2005), these include Child Marriage Restraint Act (1976), Medical Termination of Pregnancy Act (1971), The Immoral Traffick(Prevention) Act (1956), etc.The girl child or woman should have equal opportunities with the boy child, because they deserve. They should not be denied from their areas of achievement and recognition. Therefore, the government has also framed various programmes like CAPART (Council for Advancement of People's Action and Rural Technology) which provides funding to those NGO's which focuses on women, girl child, health and the like, TRYSEM (Training for Rural Health for Self-Employment), SATHIN (Name of the project for the development of women) for the development of women and for brining women into the mainstream. Along with the above programmes, it is also important to impart proper education, awareness and training and also by setting up of income generating awareness, which will help in enlightening the future of the girl child who is going to become the woman of tomorrow. Gender disparities occur in each and every field like education, health, nutrition, employment, etc. Hence, gender acts as a concept of social exclusion.

The DFID Gender Manual (2008), defines gender equality as equality of prospect between women and men in such a way that both have equal rights and entitlements to human, social, economic and cultural development and an equal voice in civil as well as political life. This is different from gender equity which refers to the implementation of those rights and entitlements leading to outcomes which are fair and just. The DFID Research strategy recognizes that eliminating gender inequality and achieving women's empowerment are essential achievement of all the MDGs (Millennium Development Goals) and that poverty discrimination can only be achieved by addressing the disproportionate burden of poverty borne by women[10]. Concrete evidence on the causes and impacts of gender inequality is essential but a lack of gender specific information and statistics makes it equally difficult to accumulate a precise picture of progress towards gender equality. Gender specific research, gender mainstreaming in research and gathering and analysing sex disaggregated data in research are all crucial to understanding gender dynamics in development.

[10] Available online on: [http://www.dfid.gov.uk/documents/publications/resaerch-strategy-08.pdf]. Ibid (2009); p.3(Accessed on 24th May, 2011)].

Gender sensitisation holds utmost importance because it incorporates the fundamental principle that women and men go through different conditions and opportunities in life, have different interests and needs and are influenced in different ways by social, political and economic processes, as a straight result of their gender. Gender is known as a social and cultural construct, and not simply a matter of male/female biological sex, that is fashioned by time and place according to a given society's social and cultural norms, customs and rules[11]. Gender is not only about women alone but about both women and men and their relative position in society in relation to each other whether in private or public domain. They are dynamic rather than static relations and can be bent by societal changes and events. This is the reason why gender mainstreaming focuses on both women and men in the goal for gender equality.

Just like the way that gender analysis is crucial to understanding the ways in which women and men experience different conditions and opportunities in life, as a direct result of their gender, so there is a need for us to equally understand the concept of social exclusion. Social exclusion is also a social and cultural build up that determines a groups position in the social order and access to development opportunities. Social exclusion is complex and multi-dimensional, usually confirmed by many factors of exclusion and liable to confirmation across various generations. So it, becomes important to know as to how to reach the excluded groups and how to aid the empowerment of disadvantaged and marginalized people in decision making process. Hence, gender and social exclusion as two different concepts need to be analyzed deeply and their relationship as well.

ICT: AN UNDERSTANDING

United Nations Division for Advancement of Women (UNDAW) (2002), says that, "Information and Communication Technology usually called ICT generally refer to an expanding assembly of technologies that are used to handle information and aid communication"[12]. These include both hardware and software media for collection, storage, processing, transmission and presentation of information in any format, computers, internet, telephone, radio, television, etc. The radio, television and print media are referred to as the

[11] Ibid (2009). P.3
[12] Available online on [http://www.connectaschool.org/itu-html/16 (Accessed on 15th March,2011)].

traditional ICTs with the advent of new ICTs like telephone, internet, mobile phones, ipads, laptops, etc.

Throughout the world, ICT is being used as an efficient tool for the enlargement of the economy, and enhancing the performance of the government and also in developing human resources. Information and Communication Technology has brought changes to the world around beyond the imagination of the earlier society. The scientific revolution in the form of Information and Communication Technology has ushered in new ways of people communicating to each other, new ways in conducting business, pleasures and has created a vast area of social network[13]. The expectation of the modern man is growing more and more and in everyday life it is expected to improve upon. For a modern society it is impossible to have good quality and comfortable life without technology.

The technologies of ICT have made impressive advances. The Information Revolution began not now but long time back when the hunter or cave dwellers used to paint pictures of animals on the walls of their cave. It took a step forward when communication through speech was invented and a further one when early societies carved symbols first on stone and then on pottery, leaves, bark of trees, cloth and paper, to record individual impressions and feelings. Then came printing by wooden blocks and later by movable types and identical copies could be prepared of communications and books.

The communication giant grew up in the nineteenth century with the advent of telegraph, the telephone and the camera along with the development of the automobile (the steam locomotive has been assembled a century earlier). But only in the present century a huge step was taken with the help of the invention of aeroplane, radio, television, satellite communication and planetary travel. Human being can now hear, speak and see at a very fast pace. He has at his command machines which have extended the capacity of his memory by a million times. Information which would otherwise would have required multi-storeyed buildings libraries can now be stored in a cabinet and the most complex sums can be solved in the wink of an eye.

There is a direct relationship between communication and quality of life. There is no disagreement over the fact that information and communication are vital input for any

[13] Available online on [http://www.hks.harvard.edu/m-rcbg/CSRI/publications/report_22_EO%20ICT%20Final.pdf] [Accessed on 21st May 2011].

security. The role of communication in health care, family planning and many other aspects of the quality of life cannot be exaggerated. The knowledge base(science and technology) is the most important thing in the present day society and so how knowledge is spread and made use of by various sections of the society becomes an extremely crucial consideration. This places immense responsibility on the groups/agencies, particularly development agencies and action groups who collect information, analyse and then communicate it to the society. Those for whom the developmental programmes are meant should have full information about the various projects and programmes launched for the benefit by the government.

Modern mass media (television, radio, VCR/cable tv, print media, etc.) have to be of great potential in information transfer, motivation, agenda setting and mobilization of people. Communication strategies have the ability to narrow down the socio-economic gap between the various segments of the society. This is because the communication strategies have the ability to economically empower women and once the women are economically empowered, it gives some kind of an edge in decision making as well. Information is essentially the starting point for knowledge and knowledge is required for decision making and for taking initiative. It is only through initiative that one can take appropriate action to implement ideas, programmes and projects. It will provide new tools to deal with knowledge, and as a result, will have far-reaching implications on the future decision-making process. The communication mediums can also help women in reaching out to other women for help and suggestions on various issues thereby making themselves more aware and knowledge receivers.

Information Technology has come as a force to move our cultures, customs and communities and advance human civilization. In the process, it will find new .applications, create new jobs and bring equality. This is because the medium of ICT itself is an impartial medium which does not distinguish between rich and poor, men and women, urban and rural, etc. The medium of ICT also connects people from all around the world, thereby removing the notions of boundary, caste, creed, religion, race, gender, etc. It is generally believed that information technology is only for the rich and the affluent and is needed only in a modern work environment. However, Information Technology is equally useful in population control, health services, agriculture, water management, transport and other major infrastructures along with steel mills, business centres, and travel agencies. Developed nations of the West have emphasized and utilized Information Technology for automation, artificial intelligence,

robotics and other advanced applications. In developing nations, the same Information Technology can be equally used to provide basic human needs and improve standards of living, however, proper application and application of this technology require a new information culture and a new orientation.

The need for information developed during what we may call the agricultural civilization. To improve agricultural activities, it was necessary to share information and knowledge in society. With agriculture, various communities developed and their need for information took a step closer to development. Earlier, transfer and sharing of information was done verbally Then, with the print media, spread of information and knowledge achieved a wider reach. With the introduction of electronics technology the concept of information storage, processing and transfer has gone through a drastic change. Now it is possible to move information very fast across the globe. In the early days, only selective pieces of information related to secret services and security were sold confidentially. Now, information has become a commodity and is available on the shelves of department stores, properly packaged and openly priced. Today, information regarding people, places, products, prices, plans, projects and programmes can be easily marketed through the electronic media. There are thousands of companies all over the world, with millions of people engaged in information processing and programming activities.

In traditional systems, information is considered to be power and power is difficult to share. People normally hold on to information and are very selective about sharing it with others. The advent of modern information systems are designed in such a way so as to bring openness, accessibility, accountability and connectivity. Along with information exchange at electronic speeds, the concept of time has changed mainly because information is now available in 'real time' with increased accessibility and connectivity[14].

The Information revolution has had far-reaching implications on political ideologies and social thought. It has not only invaded the offices and homes but also farms and fields, health centres and hospitals and many other critical activities and areas of production, services and development. It helps in crossing national boundaries and networks people from every part of the world irrespective of their nationalities[15].

[14]Available online on[http://www.preservearticles.com/201107058877/essay-on-information-technology-and-the-impact-on-the-future-work-culture.html (Accessed on 17th March, 2012)].
[15] Ibid.

Due to the advent of the Information revolution, the whole world has become like a family within close reach amongst one another. ICT has made its lasting impact on each and every field of human life. Sharing and receiving information is no more a complicated or time consuming task anymore.

ROLE OF ICT IN INCLUSION OF WOMEN

Social development at individual and societal level is essentially dependent on 'knowledge' through sharing of information, transfer of skills and expansion of technology. This is also a path for the evolving process of globalization. In the present context, ICT in all its multiple forms is playing an important role in human development at community, national and international levels. But the unequal distribution of IT within societies and all around the globe is resulting in a "digital divide" between those who have access to information resources and those who do not. Most women in developing countries are in the deepest part of the divide. Women's lower level of literacy and education relative to men as well as negative attitudes towards girls achievement in science and technology, contribute to the gender dimension of the digital divide.

Jain (2014:1), says that, "Information and Communication Technologies (ICTs) are a diverse set of technological tools and resources to create, disseminate, store, bring value-addition and manage information. The ICT sector consists of segments as diverse as telecommunications, television and radio broadcasting, computer hardware, software and services and electronic media, for example, the internet and electronic mail"[16]. Here, Jain gives a clear definition of ICTs and their roles and functions.

Jain (ibid), in her study also gives an account of NASSCOMM (2004) according to which ICTs are rising as a powerful tool for gender empowerment in a developing country like India. This study also says that, there has been a rapid growth in the ICT sector since the late 1980s and the use of ICT has dramatically expanded since the 1990s. Jain(ibid), further highlights that according to the World Bank, tele-density in India had reached 3.8% of the population by 2001. The number of internet accounts is growing at a high rate of 50% per annum. The ITES-BPO sector alone grew at 59%, and employment had reached 106,000 by 2004.

[16] Available online on: [http://www.ifuw.org/wp-content/uploads/2014/01/jain.pdf] [Accessed on 23rd March, 2014].

Jain(ibid), further says that empowerment of women in the background of knowledge societies requires building up the abilities and skills of women to gain insight into the issues affecting them and also building up their capacity to voice their concerns. It also requires developing the capacities of women to overcome social and institutional drawbacks and supporting their participation in the economic and political processes inorder to produce an all-round improvement in their quality of life.

Jain(ibid), also adds that hence India has been using ICT for development for more than two decades, there are many good practices for the use of ICTs for women's empowerment. Some of these positive steps are in the form of, India Shop, an e-commerce website (2005) in Tamil Nadu, has been designed to sell products made by rural women's co-operatives and NGOs. The Dhan Foundation (2004) and Swayam Krishi Sangam (2004) are using ICTs, such as handheld devices and smart cards, to improve microfinance projects to empower poor women. The Self-Employed Women's Association (SEWA, 2004) has several ICT projects for women, including community learning centers, a school of Science and Technology for self-employed women, and the Theliphone project, which provides mobile phones to women in the informal sector. Self-help groups of rural women in Andhra Pradesh have been so successful in marketing their products at home and abroad that the major MNCs (multi-national corporations) want to use their selling skills[17]. Some of the SHG's in Andhra Pradesh are Society for Elimination of Rural Poverty, Adarsha Mahila Samikhya (AMS), apart from these there are Kisan Call Centres (Kisan Vani), Gyan Vani, etc.

Jain(ibid), in her study also stresses on a very important aspect of access which according to her is the central concern necessary for women's empowerment. Women have always been excluded from the external information sphere, both deliberately and because of factors working to their disadvantage such as lack of freedom of movement or low levels of education. In such a situation, ICT creates a direct window for women helping them in gaining access to the outside world. The issue of access to ICTs is vital as they are considered to be a means for economic empowerment for women. The author also says that, there is a need to work towards universal access. It is important not only to establish physical facilities, such as communication networks or computers, but to ensure that these facilities are utilized by their users to the greatest possible extent. Women's access to and use of ICT is controlled

[17] Available online on [http://www.ifuw.org/seminars/2007/jain.pdf] [Accessed on 23rd March, 2014].

not only by scientific infrastructure, but also by socially constructed gender roles and relations .According to a UNESCO (2003), report on "Gender Issues in the Information Society", the potential of women to efficiently use information obtained through ICT is evidently dependent on many social factors, including literacy and education, geographic location, mobility and social class[18].

Jain(ibid), further elaborates that, in developing countries like India, more than 90% of women work in the informal sector and also in rural areas. These women engage in economic activities such as handicrafts and sewing or rolling cigarettes, weaving of baskets and fabrics, working in cities as vendors – working without any contracts or benefits. IT has the capacity to represent these women to telecommunication services, media and broadcast services that will create markets for their products and services[19]. The CRISP Working Paper (2011), talks of the well-known Self-Employed Women's Association [SEWA] in India which has been working towards bringing technology into the hands of the common people and using video as a tool for advancement and communication.

Ghotoskar (2000), points out that one of the most influential applications of ICT in the sphere of knowledge networking is electronic commerce (e-commerce). E-commerce refers not just to selling of products and services online but to the promotion of a new class of ICT acquainted women entrepreneurs in both rural and urban areas. E-commerce initiatives have the ability to connect producers and traders directly to markets at national, regional and even global levels, allowing them to reorganize their economic activities and avoid middlemen and the male-dominated and unfair market structure.

Ghotoskar(ibid), further says that, appreciably a number of non-government organizations have diversified their services to provide support to this class of entrepreneurial women. PEOPLink is one such organization which has been helping women communities who are conventionally involved with handicrafts to put their products online in the world market. This helps in building up a global network of Trading Partners [TPs] that, in turn, will provide services to several community-based artisan producer groups. It equips the TPs with various ICT tools like, digital cameras and trains them to capture images and edit them in a

[18] Available online on [http://portal.unesco.org/ci/en/file_download.php/250561f24133814c18284feedc30bb5egender_issues.pdf] [Accessed on 14th July 2009].

[19] Available online on [http://www.ifuw.org/seminars/2007/jain.pdf] [Accessed on 23rd March, 2014].

compressed format suitable for transmission through the internet[20]. The images of crafts are placed on the PEOPLink web page and efforts are made to promote them to trade and wholesale buyers in the industrialized countries. In Gujarat, India, women producers use the Dairy Information System Kiosk [DISK] which manages a database of all milk cattle and provides information about veterinary services and other practical information about the dairy sector.

Ghotoskar(ibid), then adds that, one of the strategies adopted to increase access of remote areas and marginalized groups to ICT is the development of public access centers, such as public phones, telecenters, libraries, information centers or cybercafes. Telecenters can be part of existing institutions such as health centers, schools and community centers. The growth of cybercafes and kiosks has been rapid in India, especially in the southern states where literacy is high. A knowledge center project of the M. S. Swaminathan Research Foundation in India has connected four villages in Pondicherry with practical local information in Tamil. This has proved useful in improving agricultural practices and marketing and access to medical facilities. To ensure that women take full advantage of these it is important to make the venue comfortable and safe.

A study on how women use and perceive Information Technology in five villages in rural Tamil Nadu, India analyses the outcomes from structured in-depth interviews with seventeen women internal Kiosk users and twenty two women who never used internet (non-users). Their intention was to systematically document the information and communication needs of women in rural South India as expressed by the women themselves. In order to carry out the study several significant sources were identified which must be taken into account in the design of Information and Communication (ICT) projects. Their findings suggest for four main conclusions, i) women find ICT's useful, ii) there are gender specific usage patterns and perceptions of ICT's, iii) obstacles to ICT use are generally structural (time, location. illiteracy) and not personal (eg. A prohibition from relative), and iv) manifestations of gender awareness correlate with perceptions of obstacles to ICT us.

Dalal (2006), says that the concept of gender equality is a general concern all over the world. Gender equality has acquired new dimensions with the arrival of ICT. The ICT has a prospective to bring development for a nation. It can reduce distortions, remove poverty,

[20] Available online on [http://www.iimahd.ernet.in/egov/ifip/apr2001/article.htm (Accessed on 12th August, 2011)].

empower weaker segments including women, etc. the same is however, possible only if a nation follows sound ICT strategies and policies. Dalal(ibid), says that, our priorities have to be set into those areas where we are lagging behind. And one such area is unequal access of ICT to women. The advent of ICT has changed the global scenario and many unexplored areas are now open for encashment. Dalal says that, the best part about ICT is that it is capable of various adjustments as per the needs and requirements of women in India. So much so that it can be operated from every home irrespective of its location. This needs that even the traditional and orthodox families can allow the women to participate and use ICT from their respective homes. In India, there is an abundance of "women entrepreneurs" who are capable of making their mark at the global level. However, the awareness and facilities are missing drastically. The national policies and strategies have not yet considered this unexplored political pool of intellectual inputs. Establishment of Small and Medium Enterprises, Small Scale Industries (SSIS), etc. can be encouraged.

Lavanya R. (2009) in her paper also analyses to what extent training programmes through Information and Communication Technology helps in empowering women. The study found out that the training programme when given through colleges and university had more impact than others. It helped them to gain computer knowledge with ease. Even though the training was excellent, not even a single woman established or maintained a kiosk. Thus giving training alone does not satisfy the need. A long term goal for the continuation of the use of ICT mediums is necessary. Providing training is not enough, it should be backed by long term goals.

"Networking Rural Women and Knowledge", a UNESCO(2004), project in Nabanna, India, explores innovative uses of databases, intranet portals and web-based partnerships in the local language for the benefit of poor women. The project puts emphasis on building a framework for information sharing, content creation, off-line information dissemination and web-based partnership with organizations located outside the region. The purpose of the project is building women's local information networks by providing simple facilities and training at five ICT centers in Baduria, Rudrapur, Taragunia, Arbelia and Punda[21].

[21] Available online on [http://portal.unesco.org/ci/en/ev.php-URL_ID=14725&URL_DO=DO_TOPIC&URL_SECTION=201.html (Accessed on 18th March,2010)].

UNESCO (ibid), suggests the following changes in women's organization after gaining access to information and communication through Nabanna. The study said that women gained more respect in their local communities as a result of ICT skills acquired at the center because learning to use a computer helped them distributing the information to local people as well. This resulted in greater respect both at family and community level. Younger women felt they were able to approach the job market with greater confidence than before. ICT skills help them to find jobs and increase their income. Women have achieved an increase in income as well as enhancement of solidarity among women in the community.

UNESCO(ibid), also says that, along with learning to use computers together at the ICT center women often discuss their problems, creating a sense of unity and developing leadership qualities. ICT increases women's agency in the household, community and the market. In the household, information obtained through ICT enables them to negotiate and bargain with their family members. Thus women have enhanced their togetherness and experienced collective empowerment through the Nabanna network. This sense of belongingness in the community empowers women as a group and allows them a greater voice in the community, hence increasing their influence on local government for implementing projects to promote maternal health, girls' education and sanitation. However, although the Nabanna project has tried to include marginalized women in the information network, illiterate and native women still have difficulty accessing ICTs.

ICT USE AND CHALLENGES IN WOMEN'S EMPOWERMENT

According to a USAID Report carried out by Hafkin and Taggart (1998), in many developing countries, less than one percent of the population, either male or female have access to the internet. Obtaining consistent statistics on women's internet use in developing countries is difficult because the standard indicators are seldom disaggregated by sex, and the available data are not very reliable or comparable. However, it is clear that the numbers are small and the distribution restricted. Hafkin and Taggart (ibid), say that, available figures indicate that, by region, women constitute 22 percent of all internet users in Asia, 38 percent of those in Latin America, and 6 percent of Middle Eastern users. No regional figures by sex are available for Africa. According to them, it should be noted that most women internet users in developing countries are not representative of women in these countries as a whole but, rather, are part of a small, urban, educated elite. Developing countries with high female

internet use have low overall internet use. In countries where the internet is used primarily by urban elite, women are well represented. But as GDP rises, the overall dominance of men edges the presence of female use lower[22].

Jain (2014), in her study titled 'ICT's and Women Empowerment: Some Case Studies from India', says that women have to go through massive challenges to use ICT for their own economic empowerment. She also says that, using and benefitting from ICT requires not only education but also training, reasonable access to the technology, relevant information and a tremendous amount of support. Admittance to reasonable services and availability of infrastructure is undoubtedly one of the chief requirements if ICT's are to be used for women's financial empowerment. Availability of electricity connections, proper transport facilities and security issues also influence the use of ICT to a great extent.

One of the most important factor responsible for escalating the ability of girls and women to take advantage of IT opportunities is education. This requires interventions at each and every level right from literacy through scientific and technological education as well. To prepare women to enter IT fields, the intense efforts of the past decade to ensure access to good quality education for girls needs to be continued and strengthened. IT needs to be incorporated into the educational curriculum or programmes. Improving the quality and reach of basic education through IT has been all the more essential to justifying the gender divide for women especially in the developing countries.

Malhotra (2004), says that since the percentage of women living in rural areas are more than the men, the gender divide in internet access runs equivalent to the rural/urban divide. He further adds that, even though in rural areas the population of women is almost 60 percent, the resources and infrastructure for IT are usually missing. Connectivity is normally available only in metropolitan or large cities in developing countries. With their additional responsibilities for children and the elderly, women usually find it quiet difficult than men to move about to towns and cities. As a result, increasing women's access to IT involves increasing the availability of communication in areas where women live. Addition of infrastructure, particularly wireless and satellite communications, to the rural or under developed areas is vital to this process. Malhotra(ibid), also says that, efforts to gain access

[22] Available online on [http://pdf.usaid.gov/pdf_docs/PNACM871.pdf][Accessed on 11th June, 2011].

should focus on the establishment of ordinarily used facilities such as telecenters, community phone shops, and other public places suitable and reachable to women.

Malhotra (ibid), further goes on to say that, till today, majority of the women using IT have come from the educated and higher strata of the society. But if poor women in developing countries can conquer the hurdles that at present prevent their access, they can use IT to help boost access to resources and exercise their basic rights. Amongst the most interesting and likely solution are those which are under process in India, which is now becoming a source of modernization for IT applications planned to meet the needs of the poor. These include projects by SEWA, Gyandoot, Tarahaat, and the Indian National Dairy Development Board. Regrettably, even though many positive efforts in this direction has been tested in pilot projects all around the world, only a few have demonstrated to be easily put into practise**.**

Malhotra(ibid), also says that, aside from individuals with higher income, easy access to a computer and the internet is unusual in developing countries. Most women who use IT usually do so at work, where gender inequities already exist and are well established. Most women stepping into the world of IT use it as an instrument of production for everyday office work, and very few women use it as a tool of communication for the construction and sharing of information. Furthermore, women in both developed and developing countries are noticeably absent from IT decision-making positions[23].

SUMMING UP

The prospective of ICT for women in developing countries is to a great extent dependent upon their levels of technical skill and education and is the chief requirement for accessing knowledge from the international pool. Both the Government as well as the NGOs need to teach technical education on the use of ICT as a part of both formal and informal education system and to commence distance learning and vocational courses[24]. It needs to be realized that Information and Communication Technology by itself cannot answer all the problems facing women's development, but it does bring new information resources and can open new communication channels for marginalized communities. Lastly, when policies and programmes are in place to improve access, scarcity of funds should not be a hindrance to

[23] Ibid.

[24] Available online on [http://www.cddc.vt.edu/knownet/articles/WomenandICT.htm][Accessed on 18th May,2010].

establishing ICT access points or even implementing telecenter-type programmes. As indicated by some of the above mentioned studies that, although the costs of using ICTs for development may be high, but at the same time not using them at all may prove to be a loss.

Although lack of access to Information and Communication Technologies (ICTs) is obviously not an element of poverty in the same way that inadequate nutrition or inadequate shelter is, but ICTs are increasingly important in the effort to escape poverty. ICTs provide access to information that can create earning opportunities, improve access to basic services, or increase the impact of education and health interventions. The poor through the ICTs are given a medium through which they can demand government support and reform. So, lack of knowledge or access to ICT undoubtedly works as a disadvantage.

Women are open to the elements of great discrimination in the field of economics, education, health and social services access worldwide. On the other hand, the variety of women's economic activities in developing countries is very wide with lot of options. It includes not only formal sector and informal sector employment, but also self employment in farming, poultry, etc. There are numerous possibilities for ICTs to improve women's economic activities in the field of trade, governance, education, health, crafts, employment in formal as well as informal sector. ICTs carry along with them a lot of opportunities for women in the work places and small businesses as well. But women's lack of time influences the form and content of ICTs. Most women do not perceive the benefit of ICTs, and neither are they able to use them to their full potential, unless they get to see an instant benefit or result from their participation in ICTs.

Inadequate infrastructure, inadequate access to education, inadequate accesss to computers, language barriers and the like are some of the factors that still create gender gap for women to access ICT. Apart from the above problems, Indian women have been facing various constraints over the ages like patriarchy and social pressures, gender inequality, caste based discriminations and social restrictions, inadequate access to productive resources, poverty, insufficient advancement facilities and powerlessness.

The above problems have overwhelmed the lives of Indian women with little break. But in the new circumstances created by Structural Adjustment Programmes (SAP) for globalization are varied and include all aspects of women's lives in India. It has affected both the quality

and quantity of work available to the majority of women in India. The traditional role of women in agriculture, livestock and animal husbandry, khadi and village industries etc. is being undermined because mechanization and automation is becoming prevalent in the market based economy. Hence, information needs of women in the new globalized environment will be as diverse as the socio-economic scenario. Within women's group itself, globalization has created the haves and the have not's i.e. those who are in an advantageous position due to globalization and those who are pushed further into disadvantaged position under the new economic policy. Hence, the information needs of these two groups will also differ accordingly.

The present chapter was decided to be incorporated because gender is a concept of exclusion. Gender is an excluded category according to the views of Silver, Kabeer, De haan, etc. Gender is looked as an incidence of exclusion, whereas ICT can be a measure towards Inclusion and hence it was necessary to see the interplay between these two terms. In this context, the concept of ICT needed a clear understanding because in India, ICT was given a leap in 1984 by the Congress government under Rajiv Gandhi, where he launched massive programs of computerisation of various government departments, etc(Bajwa, 2003). ICT is one medium which has penetrated almost all spheres (govt., private, all alike)and very fast. But the main reason behind incorporating this chapter is to have an understanding about the potential of ICT and how it can reach women at their door steps who are otherwise held back by cultural and physical barriers.

The present chapter highlights on the conceptual understanding of social exclusion, its origin and various definitions, gender as a concept of social exclusion and an understanding on the concept of ICT and the inclusive role played by ICT in bringing women to the forefront. But women who lack the skills, knowledge or access to ICT face a further disadvantageous position not only because of their gender status but also because of the disadvantages they have to face due to lack of access to ICT which acts as a double discrimination/disadvantage for these women. The digital divide aspect gets highlighted from the problems and challenges that women face in the access and ability or the lack of it in using ICT for their benefit or development.

Hence, in this present scenario of technological development and globalization where world has become a global village, women still lag behind men in many walks of life. Even though

ICT has been fruitful in reaching out to women to a great extent, but women hailing from the rural sector have been still lagging behind. They face multiple exclusion because of their gender as well as because of their social, economic and geographical background. Hence the role played by ICT in the inclusion of women has been commendable but special efforts should be given for the development of rural women by using ICT as a medium so that they can be on par with their male counterparts as well as their female counterparts from the urban areas.

CHAPTER- III

FEMINISM AND WOMEN EMPOWERMENT

The concept of feminism, according to Mc Manus (2000), is defined as a "modern movement to promote the full equality of women with men and the high valuation of women as human beings"[1]. Feminism talks of how women have been basically subordinated by men since ages and hence women need to be given equal rights to come on par with the men folk. Feminists denounce the unequal treatment being meted out with women. Simone de Beauvoir (1949), one of the early writers on Feminism in her book 'The Second Sex' says that, "Woman herself recognizes that the world is masculine on the whole; those who fashioned it, ruled it, and still dominate it today are men"[2]. The years of subjugation of women has led her to think that she is inferior to her male counterparts. Men have been dominating over women since ages. Men continue to occupy almost all the decision making spheres even today as well. This has kept their dominance over women quiet prominent even in the present day. And women in developing countries are traditionally tied to the strings of patriarchy, hence empowerment of women is quiet difficult under such circumstances.

STATUS OF WOMEN IN INDIA

The U.N's Universal Declaration of Human Rights says, "All human beings are born free and equal in dignity and rights"[3]. This declaration implies a tacit recognition of gender equality as well. The constitution of India too guarantees women an equal status: All are equal before the constitution and any discrimination based on gender, caste, race, etc is unconstitutional. In accordance with this presumption, the Directive Principles provides for equal pay for equal work for women at par with men. Our law also recognizes women's right to immovable property, to freedom of marriage, to education and to employment. Rather, women have an advantage over men, the Hindu religious institution places women at a higher level where a woman is a goddess and is to be revered and worshipped.

But in actual practice, however, gender equality seems to be a myth. Our world is clearly governed by a fundamental principle that power is vested in the one who controls the income. Since, man has been the breadwinner, he has also been in the fore front. Initially, woman's role in maintaining a family was given due recognition, but down the ages, her importance

[1] Available online on[http://www2.cnr.edu/home/bmcmanus/femtheory.html][Accessed on 11th May, 2013].
[2] See Simone de Beauvoir.1949, *The Second Sex*, p. 609.
[3] Available online on[http://www.un.org/en/documents/udhr/][Accessed on 13th March,2011].

got diluted and she was reduced to a non-entity. Social evils like purdah system, dowry system, denial of education and early marriage for many years and even in the present day as well are some of the factors which were acting as serious disadvantages for the empowerment or growth of women for many centuries. In different stages of her life, she was kept under the subjection of her father, her husband or her sons. If unfortunately, she became a widow, she faces additional problems of struggle and burden.

All observations on the place of women in India are bound to be full of contradictions, as Indian society does not have a well-defined uniform attitude towards women. Women are sometimes treated as a play thing for men, as objects to be traded in and as slaves. Whereas, some believe that women are the better half of men and must be treated with respect. There are others who worship women in theory but does not want to free them from male dominance. There exists a gendered gap between rural and urban India.Urban India is quite progressive where the girl child is sent to school along with the male child and is given the same facilities as her male counterpart. But rural India continues to be in the shackles of medieval orthodoxy and subscribes to the view that women are meant only for health and home. Women comprise of half of the world's population and manufacture half the world's food supply and comprise of 60% of the working force but only about 30% of the official labour force, receive benefits of only 10% of the world's economy and own less than 1% of the world's real estate[4].

History shows that women enjoyed an honoured position in ancient India. During Regivedic times, women enjoyed equal status with men. In the Brahmin age, women were pushed into the background and with the coming of Islam, they completely lost their glory[5]. Cut off from the mainstream of life, they became secluded and shattered. They grew dependent on menfolk. Immoral and inhuman practices began to be inflicted upon them in the name of customs. Some of the prominent amongst these inhuman practices were sati, child-marriage and ban on the marriage of widows. Women were also concentrated to mere household chores and with this the Indian society went back into the dark ages.

Women's participation in the struggle for India's independence brought in a new age and bright future for women in India. They came out of their veil to the forefront of national liberation movement. They gave immense support to their male counterparts in their fight for

[4] Available online on[http://www.ilo.org/public/english/region/asro/bangkok/library/download/pub96-01/chapter2.pdf] [Accessed on 12th April, 2012].
[5] Ibid.

freedom. It was at this stage that an enlightened section advocated the emancipation of women. Sarojini Naidu was the voice of the emergent Indian women. Women belonging to all sections of the society revolted against the established purdah system and gathered under the tri-colour. Independence of India opened a new chapter in the history of women. The constitution of India granted them full equality. The concept of women playing a second role to man was rejected in principle. Various legislative measures such as the Hindu Marriage Act(1955), Family Courts Act(1984), Equal Remunerations Act(1976)[6], etc. were adopted to remove all those prejudices that stood in women's way to progress and equality. They started participating freely in the political, economic, social and cultural life of the nation. Free India had her woman ambassadors, woman cabinet ministers, women scientists and engineers, woman police officers and magistrates such as Indira Gandhi, the first woman Prime Minister of India, Medha Patkar (social activist), Jayalalitha (politician), Sheila Dixit (politician), Kiran Bedi (retired IPS officer), Late. Kalpana Chawla (astronaut), who was an Indian American Diaspora, and the like, to name a few.

The government has also taken substantial steps to give women a fair deal. The Hindu Code Bill(1955-56) which consists of the Hindu Succession Act of 1956(amended in 2005) conferred on women the right to paternal property, and a complete right to divorce. There was a move to reserve thirty-three percent seats in legislative bodies for women, but though most of the political parties accepted the idea in principle, they did not show any serious inclination to enact a law on this issue or to implement it at the ground level. The Government of India also declared the year 2001 as 'Women Empowerment Year' with a focus on achieving 'the vision of the new century of a nation where women are equal partners with men'. All these are winds of change that indicate a definite shift in the place of women in our society.

Modern women at least in urban areas are symbols of the courageous reassertion of Indian womanhood. More and more women are taking up jobs in offices. There are women who compete with men in All India Services. Women are slowly but eventually joining the various fields of academics, politics and business as well. Women have started to realise the various spheres where they can make a mark in the society and are hence taking steps and making efforts to join these spheres. Women are aware of the fast changing world of

[6] Available online on: [wcd.nic.in] [Accessed on 12th April, 2012].

competition. This self-awareness and a sustained effort to rise in life show Indian women's dynamism and zeal.

The emancipation of women, however, remains confined to small pockets in urban India. The real picture shows that even today, in most parts of India, women continue to be the 'second sex' or the 'inferior one'. The 2001 census places the sex ratio at 933 females to 1000 males. Life expectancy among females is much lower than the national average of 62 years. Literacy rate among women is much lower than the male literacy rate-52 against 74. But the recent Census (2011) data shows that there has been an overall increase in the female sex ratio by 0.75% as compared to the 2001 census data. The total female sex ratio in India is 940 females per 1000 males and the female child sex ratio is 944 girl children per every 1000 boy children (Census, 2011)[7]. In many parts of India, woman is considered to be a child bearing machine which has to be run, not educated. Most of the girls are never sent to school and about half of those that enter the schools, many drop-out without completing even the primary level education. Female foeticide and infanticide are quite rampant. The Census (2011) data shows that the sex ratio in states like Bihar(916/1000 males), Daman & Diu(618/1000 males), Jammu & Kashmir(883/1000 males) are the three states which still need to improve their female sex ratio. Kerala on the other hand has the highest female sex ratio which stands at 1084/1000 males[8]. The rest of the nation needs to learn from the Kerala scenario. In spite of the fact that sex discrimination and sex determination test is banned in India, this test is openly carried out with impurity and in a large number of cases, if the test reveals a female foetus, the mother is forced to abort.

Women of all ages are subjected to a great deal of harassment both inside and outside the house. Young girls are the victims of a general bias against them. Dowry related violence and rape cases are also quite common. The condition of working women is even more pathetic. They are given neither credit nor any physical on moral support for taking up a job and contributing to the family income. Bringing up the children and looking after their education is also women's job. They are a wife, mother, governess, tutor, cook, maid- all rolled into one. The bone-breaking toil earns them neither wages nor appreciation or even recognition.

The fact that political parties have been contemplating 33 percent reservation for women in legislative bodies underscores the absence of equality between men and women. Had they

[7] Available online on[http://www.mapsofindia.com/census2011/female-sex-ratio.html][Accessed on 13th December 2012].
[8] Ibid.

been equal, their equality would have been reflected everywhere and any talk of reservation, would have been irrelevant. Their representation on the elected bodies is almost negligible, and political parties, though apparently in favour of reservation, seem to be unwilling to accept it in practice. That is why there has never been any consensus on this issue. Two basic conditions need to be fulfilled to bring about gender equality: men shed their male chauvinism and women are given adequate education. Enacting laws and taking other legislative measures will not empower women, but if they are educated, they will compete with men and acquire power on merit. If we discard the myth of male superiority, gender equality will cease to be a myth and will become a reality.

CONCEPT OF EMPOWERMENT

Women Empowerment means recognizing women's involvement and their knowledge, enhancing their self- respect, dignity, becoming economically independent, controlling their resources and women being able to fight their fears, inferiority, etc. Empowered women respond as equals and cooperate in order to work towards common good. They use their talents to live fulfilling lives. It is a process that allows women to gain access to and control of material as well as information resources. Palanthuri (2001), mentioned that the term women's empowerment has come to be associated with women's struggle for social justice and equality. Women's empowerment could be considered as a process in which women gain greater share of control over resources- material, human and intellectual. Women's empowerment refers to the process by which women acquire due recognition on par with men, participate in the development process of the society through the political institutions as a partner with human dignity.

Empowerment therefore is a process aimed at changing the nature and reaction of certain forces which marginalize women and other disadvantaged sections in a given context. Issues of equality and rights for women were always claimed as crucial components in state policy. Much of the justification for rights, justice and equality for women came from the need for 'emancipation' on 'liberation' of women. In India, the National Policy for the Empowerment of Women was drafted in 2001. The main objective of this policy is to bring about awareness, development and empowerment of women inorder to make women realise their full potential. The year 2001 was hence referred as the Women Empowerment Year. In Goel and Rajnesh (1994), the Tenth Five Year Plan (2002-2007) further aims at empowering women through translating the Natioal Policy for Empowerment of Women (2001) through a Rights Based

Approach. The three strategies adopted in this plan includes social empowerment, economic empowerment and gender justice. The Eleventh Five Year Plan (2007-2012) recognized women as equal citizens and agents of economic and social growth[9].

While empowerment has become important for creating enabling conditions for disadvantaged groups, at the same time, it has also become a rallying cry for grass-roots movements. The conception of disadvantaged groups as passive recipients on target groups of specific state policies has to some extent been overcome. Yet, if one examines the manner in which specific policies have unfolded, we may find that they do not conform to the idea of empowerment as a liberating condition generated by active collective activity.

The democratic process in India created the awareness among the women about their plightful condition. The principle of gender equality which is enshrined is the Indian constitution not only grants equality to women, but also empowers the state to adopt measures of positive discrimination[10] in favour of women. For example, the 73rd and 74th Amendments (1993) by the constitution of India provides for reservation of seats (at least one-third) in the local bodies of Panchayats and Municipalities for women. Another constitutional Amendment (84th Constitutional Amendment Act 1998) reserving 33 percent seats in parliament and state legislatures is in the process[11].

The Indian Government has passed various legislations to safeguard constitutional rights to women. These legislative measures include, The Hindu Succession Act (1956), Dowry Prohibition Act (1961), Medical Termination of Pregnancy Act (1971), Equal Remuneration Act(1976), Child Marriage Restraint Act (1976), Immoral Trafficking(Prevention) Act Orissa Review, December-2004(1986) and finally pre-natal Diagnostic Technique (Regulation and Prevention of Measure) Act (1994), etc[12].

Apart from these, various welfare measures have been taken up by the Government from time to time to empower the women. Some of them are Mahila Samriddhi Yojana(1991), the Rashtriya Mahila Kosh (1992-93), Indira Mahila Yojana (1995), DWACRA Plan (1997) and Balika Samriddhi Yojana (1997). National commission on women was created by an Act of

[9] Available online on [http://www.igrc.info/index.php/India-Gender-Framework/women-in-the-11th-five-year-plan.html][Accessed on 14th July,2012].
[10] In the context of the allocation of resources or employment, the practice or policy of favouring individuals belonging to groups which suffer discrimination. [Available online on: http://www.oxforddictionaries.com/definition/english/positive-discrimination] [Accessed on 18th May, 2012].
[11] Available in the website of Ministry of Women and Child Development.
[12] Ibid.

Parliament in 1992. Besides these, India has also ratified various international conventions and human rights instruments committing to secure equal rights of women key among them is the ratification of the convention of elimination of All Forms of Discrimination Against Women (CEDAW) in 1993[13].

The liberation of women is not a minute matter. It requires a change in the attitudes of the husband, other family members and society as a whole including the women herself. The community awareness and bureaucratic efforts are essential parts of the implementation of the programmes. The first and foremost priority needs to be given to the education of women, which is the common problem. The struggle for gender justice will be slow, tiring and extended, as it is not at all easy to bring about the change. It has to be fought at emotional, cognitive and action levels. The struggle has to be carried on within caste, class, race, religion, everywhere in which man-woman relationships figure and matter.

Kalluri (2009), says that within the framework of a democratic polity, our laws, development policies, plan and programmes have aimed at women's advancement in different spheres. From the Fifth Five Year Plan (1974-79) onwards, there has been a noticeable shift in the approach to women's issues from welfare to development. In recent years, the empowerment of women has been recognized as the central matter in determining the status of women. Kalluri(ibid), also says that, The National Commission for Women was set up by an Act of Parliament in 1992 to safeguard the rights and legal entitlements of women. The 73rd and 74th Amendments (1993) to the Constitution of India have provided for reservation of seats in the local bodies of panchayats and municipalities for women, laying a strong base for their partaking in decision making at the local levels.

India has also ratified several international conventions and human rights instruments committing itself to secure equal rights for women. Key among them is the ratification of the Convention on Elimination of All Forms of Discrimination Against Women (CEDAW) which has been adopted in 1979 by the UN General Assembly[14]. The commission has been organising conferences and seminars across the world in Mexico (known as the Mexico Plan

[13] Ibid.
[14] Available online on[http://www.un.org/womenwatch/daw/cedaw/cedaw.htm][Accessed on 23rd August, 2011].

of Action, 1975), in Nairobi (known as the Nairobi Forward Looking Strategies, 1985), in Beijing (known as the Beijing Platform for Action, 2005)[15].

The above mentioned government policies and schemes along with the efforts of the non-governmental organizations (NGOs) which have grass-roots presence and deep insight into women's concerns have been responsible to a great extent in contributing and inspiring initiatives for the empowerment of women.

However, there still exists a wide gap between the goals formulated in the constitution, policies, plans and programmes on the one hand and the ground reality of the status of women in India, on the other. Gender disparity manifests itself in various forms, the most obvious being the trend of continuously declining female ratio in the population in the last few decades(Census 2011). Social stereotyping and violence at the domestic and societal levels are some of the other manifestations. Discrimination against girl children, adolescent girls and women persists in various parts of the country. Patriarchy is also responsible to a great deal for the backwardness of women. The male dominated, patriarchal society and caste hierarchy system like ours creates a great deal of restrictions for the women in the society.

Consequently, the access of women particularly those belonging to weaken sections including SC'S/ST's/OBC's and other minorities, majority of whom are in the rural areas and in the informal, unorganized section-to education, health and productive resources, among others, is inadequate. Therefore, they remain largely marginalized, poor and socially excluded.

JUDICIAL LEGAL SYSTEMS

Legal-judicial system should be made more responsive and gender sensitive to women's needs, especially in cases of domestic violence and personal assault. New laws need to be exacted and existing laws reviewed to ensure that justice is quick and the punishment meted out to the culprits is in accordance with the severity of the offence.

The evolution of property rights in a patriarchal system has contributed to the subordinate status of women. The aim should be to encourage changes of laws relating to ownership of property and inheritance by evolving consensus in order to make them gender just. The Justice Verma Committee was formed on December 23rd,2012 and the committee submitted its report on recommendations on laws related to rape, sexual harassment, trafficking, child

[15] Available online on [http://www.un.org/womenwatch/daw/beijing/index.html][Accessed on 23rd August, 2011].

sexual abuse, medical examination of victims, police, electoral and educational reforms on January 23rd ,2013[16]. The committee recommended that rape and sexual assault are not crimes of passion but an expression of power and domination[17]. Indian society which is patriarchal in nature still considers women to be mere play thing and try to take advantage of innocent girls and women by outraging their modesty which makes them feel superior over women who they consider as weaker and inferior. Women are abused not only verbally but also physically and mentally. Children are sexually exploited and both women and children are illegally trafficked for prostitution. The recent Nirbhaya case(Delhi gang-rape case) proves the height of inhumanity which one person can impose on another. There need to be stricter laws relating to crimes against women and the case should be taken up in a fast track court with the intention of delivering justice at the earliest. But the mental and physical trauma of abuse and torture cannot be taken away from the victim. Justice without much delay could be the only way through which the pain suffered by the victim can be reduced a bit.

DECISION-MAKING

Women's equality in power sharing and active participation in decision-making, including decision-making in political process at all levels should be ensured for the achievement of the goals of empowerment. All measures should be taken to guarantee women equal access to and full participation in decision making bodies at every level, including the legislative, executive, judicial, corporate, statutory bodies, as also the advisory commissions, committees, Boards, Trusts, etc.,. Affirmative action such as reservations/quotas, including in higher legislative bodies, should be considered whenever necessary on a time-bound basis. Women-friendly personnel policies will encourage women to participate effectively in the developmental process.

MAINSTREAMING A GENDER PERSPECTIVE IN THE DEVELOPMENT PROCESS

Policies, programmes and systems should be established to ensure mainstreaming of women's perspectives in all developmental process. The gaps in policies and programmes require women specific interventions to bridge them. Coordinating and monitoring

[16] Available online on[http://www.prsindia.org/parliamenttrack/report-summaries/justice-verma-committee-report-summary-2628/][Accessed on 15th March,2013].
[17] Ibid.

mechanisms will help to access from time to time the progress of such mainstreaming mechanisms. Women's issues and concerns as a result will specially be addressed and reflected in all concerned laws, sectoral policies, plans and programmes of action. While framing the policies and programmes, the government should keep in mind the women-centric approach. Since, our's is a patriarchal country and the women are still considered weaker, they need special protection and attention. Women- specific laws are required to make women more empowered and bring about equality along with their male counterparts.

ECONOMIC EMPOWERMENT OF WOMEN

Since women comprise the majority of the population below the poverty line and are very often in situations of extreme poverty, given the harsh realities of intra-household and social discrimination, macro-economic policies and poverty eradication programmes will specifically address the needs and problems of such women. Steps should be taken for mobilization of poor women and convergence of services, by offering them a range of economic and social options, along with necessary support measures to enhance their capabilities.

In order to enhance women's access to credit for consumption and production, the establishment of new and strengthening of existing microcredit mechanisms and micro-finance institutions should be undertaken so that the outreach of credit is enhanced. Other supportive measures will ensure adequate flow of credit through financial institutions and banks, so that all women below poverty line have easy access to credit.

Globalization has presented new challenges for the realization of the goal of women's equality, the gender impact of which has not been systematically evaluated fully. However, from the micro-level studies that were commissioned by the Department of Women & Child Development it is evident that there is a need for reframing policies for access to employment and quality of employment. Benefits of the growing global economy have been unevenly distributed leading to wider economic disparities, the feminization of poverty, increased gender inequality through often deteriorating working conditions and unsafe working environment especially in the informal economy and rural areas. Strategies will be designed to enhance the capacity of women and empower them to meet the negative social and economic impacts, which may flow from the globalization process.

In view of the critical role of women in the agriculture and allied sectors, as producers, concentrated efforts will ensure that benefits of training, extension and various programmes will reach them in proportion to their numbers. The programmes for training women in soil conservation, social forestry, dairy development and other occupations allied to agriculture like horticulture, livestock including animal husbandry, poultry, fisheries, etc., has been benefitting women workers in the agriculture sector.

The important role played by women in electronics, information technology and food processing and agro-industry and textiles has been crucial to the development of these sectors. Some of the successful women entrepreneurs include Indra Nooyi (CFO, Pepsico), Indu Jain (former chairperson of Times Group), Ekta Kapoor (Creative Director of Balaji Telefilms), and the like. They should be given comprehensive support in terms of labour legislation, social security and other support services to participate in various industrial sectors.

SOCIAL EMPOWERMENT OF WOMEN

Equal access to education for women and girls and steps to eliminate discrimination, universalize education, eradicate illiteracy, create a gender-sensitive educational system, increase enrolment and retention rates of girls and improve the quality of education to facilitate lifelong learning as well as development of occupation/vocation/technical skills by women are needed. Reducing the gender gap in secondary and higher education is very important and should be a focus area. Gender sensitive curricula should be developed at all levels of educational system in order to address sex stereotyping as one of the causes of gender discrimination.

HEALTH

A holistic approach to women's health which includes both nutrition and health services is required and special attention has to be given to the needs women and the girl at all stages of the life cycle. The reduction of infant mortality and maternal mortality, which are sensitive indicators of human development, should be a priority concern. Women should have access to comprehensive, affordable and quality health care. To effectively meet problems of infant and maternal mortality, and early marriage the availability of good and accurate data at micro level on deaths, birth and marriages is required. Strict implementation of registration of births and deaths should be ensured and registration of marriages should be made compulsory.

WOMEN UNDER EXTREME CONDITIONS

In recognition of the diversity of women's situations and in acknowledgment of the needs of specially disadvantaged groups, measures and programmes should be undertaken to provide them with special assistance. These groups include women in extreme poverty, destitute women, women in conflict situations, women affected by natural calamities, women in less developed regions, the disabled, widows, elderly women, single women in difficult circumstances, women heading households, those displaced from employment, migrants, women who are victims of marital violence, deserted women and prostitutes etc.,

All forms of violence against women, physical and mental, whether at domestic on societal levels, including those arising from/customs, traditions on accepted practices should be dealt with effectively with a view to eliminate its incidence.

All forms of discrimination against the girl child and violation of her rights has to be eliminated by undertaking strong measures both preventive and otherwise within and outside the family. These would relate specifically to strict enforcement of laws against prenatal sex selection and the practices of female foeticide, female infanticide, child marriage, child abuse and child prostitution, etc. Removal of discrimination in the treatment of the girl child within the family and outside and projection of a positive image of the girl child should be actively fostered. There is a need to use various ICT measures and promote gender equality awareness campaigns through the use of social media, distribution of pamphlets, street plays, rallies, workshops, seminars, slogans and the like.

The status of women in independent India and their empowerment occupies an important place and all efforts are being made to establish the significant role that she can play in the uplift of her own self, her family and the society at large. Not only the removal of inequality and imbalance but also improvement in the quality and standard of life of the women is important and should be the goal.

FEMINIST APPROACH

Bhasin and Khan (2004), say that Feminism is a philosophy in which women and their contributions are valued. Women's study is the academic manifestation of Feminism. It is based on social, political and economic equality for women. A feminist need not necessarily

be a woman , rather it could be anyone, boys, girls, men or women. Feminism focuses on the equality of both the sexes. Feminism is also considered as the modern movement to promote full equality of women with men and the high valuation of women as human beings[18].

Feminists can be categorised into many types. They are: Liberal Feminists, who focus on individual rights and autonomy; minimize male/female difference; emphasize equality of opportunity and promote strategies that tear down barriers; seek to extend to women the individual rights gained by men. There are those called as Social Feminists, who focus on material conditions and how these create oppressive societal structures, particularly class; emphasize effort to reform communities and institutions; stress social relations and responsibilities more than individual rights. The Cultural Feminists talk of maximizing male/female differences, stressing on the positive value of women's "different voice" and emphasizing on the importance of incorporating this into the legal system and seeking to recover and revalue women's culture, especially maternal values[19].

The goal of the Radical Feminists, on the other hand is to maximise male/female difference but stress disparities in power, especially male dominance and they focus on sexuality and sexual relations as key to patriarchal oppression; seek to use law to help women "take control of their own bodies". There are those who are called as Diversity Feminists who emphasize on the differences among women, including race, ethnicity, class, etc. They are also called Multicultural Feminists who focus on coalition building among different groups of women and the promotion of international and global programs of reform[20]. Last but not the least, there are Eco Feminists. "Eco-feminism is generally regarded as a feminist approach to environmental ethics. Eco-feminists see the oppression of women and the domination of nature as inter-connected; as a movement, eco-feminist theorists use a framework that confronts issues of gender, race, class and nature"[21]. The above mentioned concepts are very much relevant in the field of ICT as well because ICT is an impartial medium and it does not discriminate across genders but in a patriarchal society such as ours, the use of ICT by women gets restricted, which in a way gives rise to inequality.

[18] Available online on [http://www2.cnr.edu/home/bmcmanus/femtheory.html][Accessed on 13th May, 2013].
[19] Ibid.
[20] Ibid.
[21] Available online on [http://www.feministcampus.org/fmla/printable-materials/women_environment.pdf][Accessed on 17th June, 2013].

Gender discrimination is found in almost all rungs in various extreme and subtle forms. Cultural valuation of male heir and patriarchal bias in spaces inside and outside house has fundamentally demeaned the material, emotional and cultural conditions of women. This historical process is understood as gender discrimination. Women are recognized as the inferior sex and are socialized to give priority to their respective male counterparts than their own individual interest. Young girls are socialized and made to feel that capacity to excel in house work is the key deciding factor for her marriage and future. The role of house keeper and care taker in name of ideal daughter, wife, mother, and governess is held paramount in the life of women discouraging any signs of individual assertion or demand. The incessant toil of women earns them neither wages nor appreciation or even recognition. The condition of working women is equally pathetic. They are given neither credit nor any physical or moral support for taking up a job and contributing to the family income. Hence, the concept of Feminism comes into forefront because it talks basically against the patriarchal structure and the provision of equal rights for women, not only in the family but also in the society.

The present chapter highlights on two important concepts related to women, "Empowerment" and those who emphasize on this issue of empowerment, "Feminism". The goals of Feminists are to demonstrate the importance of women, to reveal that historically women have been subordinate to men and to fight for gender equality. In simple terms, Feminists fight for the equality of women and argue that women should share equally in society's opportunities and scarce resources. Since, the researcher was looking at gender and gender related exclusion, it was essential to look at the academic framework which was available to talk about gender related exclusion. The Feminist studies not only deals with nature and causes of exclusion in different sectors like health, family, education, etc but also discusses about the problems of women and different levels of patriarchy in countries Africa, South- east Asia, America, etc. They also talk about the capacity building aspect of women themselves. The forthcoming chapter would deal with the various policies and programmes at the national and state level related to ICT and how far they have been playing an inclusive role in decreasing the digital divide and empowering women.

CHAPTER- IV

POLICIES AND PROGRAMMES ON ICT: AN OVERVIEW

Centre for Research on Innovation and Science Policy(CRISP)(2011), very clearly points out that, the ongoing digital divide that persists between rural and urban and between men and women at present constrains the realisation of the full potential of ICTs in reaching women. Broadly, there have been a lot of work and pilot studies that have been going on in the country. Though many of these pilot studies do provide important lesson on using ICTs for development but the survival and impact of many of these initiatives remain as matter of concern. Only a few ICT initatives have tried to clearly focus on reaching women, especially rural women. CRISP(ibid), further says that, ICT holds promises for organisations working for the interests of women on having an explicit agenda for social inclusion, gender focus and pro-poor development. Strengthening the ICT capacity of organisation that has a history of working with disadvantaged groups, rural poor and women could be the best way of reaching rural women with ICTs.

CRISP(ibid), points out on the fact that ICT based enterprises have a capacity to employ many number of women who are educated up to 10th or preferably 12th class in the lower level of the BPO section. There are also opportunities to train some of these rural women for self employment in the IT sector.

CRISP(ibid), also says that, Radio (All India Radio) and television disseminate a wide range of information relevant to socio-economic development and these include agriculture, health, rural employment, e-governance, environment etc. Women who have access to these media have mostly benefited as inactive recipients of information and advice. In most of the other ICT initiatives that depend on print media, internet, mobile phones, videos, etc., there is not enough evidence to show its access and use by women

Information and Knowledge have been contributed and recognised globally for bringing about social and economic development. The advent of new age ICTs, especially, personal computers, the internet and mobile telephone during the last two decades have provided a much wider choice in collection, storage, processing, transmission and presentation of information in multiple forms to meet the diverse requirement and skills of people. The role

of ICTs is recognised in Millenium Development Goal No. 8(MDG8)[1], emphasises the benefits of new technologies, especially ICT in the fight against poverty. Millenium Development Goal No. 3 also talks of promoting gender equality and empowering women[2]. Sachs(2005), has propounded interesting observations with regard to the end of poverty. He clearly stresses on the economic, political, environmental and social factors which usually are responsible for keeping the societies backward. He makes clear distinctions between the various types of poverty such as extreme, moderate and relative poverty. He also further stresses that there needs to be significant increase in the help provided by the rich to the poor countries. Sachs, who is a positivist, says that this goal of ending poverty can be reached in a mere twenty years[3].

Miller (2000) says that, in the framework of information sphere, the issues of gender equality, equity and empowerment of women has become even more noteworthy as women have an important role in storage and transfer of essential knowledge, which often forms the outline of survival for communities to adopt and minimise their risk is adverse circumstances. Women, because of their biological and social role are normally more embedded than men in the boundaries of their locality. They are therefore more aware than men of the social, economic and environmental needs of their own communities.

While discussing ICTs, there is a need to look at the two types of ICTs, CRISP(2011):

1. Traditional ICTs such as radio, television, and print media and,
2. New ICTs such as internet, telecommunication, networks, mobile phones, personal computers and databases.

Chapman and Slaymaker (2002), are of the opinion that presently we are witnessing an uprising in both the media as well as the ICTs. There is a huge literature on the potential and benefits of using these technologies for wider rural development. On the other hand, the disagreement between the potential for ICTs to address the challenges faced by rural development and the existing failure to tie them together for this purpose is prominent. Hunger and Mitter (2003), on the other hand, have a growing realisation that the digital divide - the gap between those who have access to technology and those who do not- is not merely technological. Besides, a digital gap between women and men in society, there is a social divide among the information rich and poor in societies. Here, Hunger and Mitter have

[1] Available online on: [http://www.srds.co.uk/mdg/8-goals.htm][Accessed on 18th July, 2009]
[2] Ibid.
[3] Available online on: [http://www.wmausa.org/page.aspx?id=95937] [Accessed on 15th June, 2013]

tried to raise an important issue that the digital divide is not only technological but something more than that. This gap is also very much social and cultural. Taking the Indian scenario, where divisions occur in the name of caste, creed, race, religion, gender, etc., this gap is deeply rooted in the patriarchal and age old traditions and patriarchal mentality of the Indian society.

BACKGROUND

Over the past few years, the Government of India has made enormous investments in reinforcing the ICT infrastructure and has taken several policy initiatives to draw private sector investments in ICT infrastructure and service delivery. In response to this, access to ICTs has been growing at a higher rate as well. Consequently, the digital divide, in terms of access to ICTs has been growing at a higher rate. The Government of India (2009), as part of the National e-governance Plan (NeGP) has announced, "a massive country wide e-infrastructure reaching down to the remotest villages in evolving and a large-scale computerisation of back-end is taking place to enable easy and reliable access of public services over the internet. The Planning Commission (2010), while carrying out its mid-term assessment of the Eleventh Five Year Plan accepts the existence of a digital divide in terms of the internet and broadband connectivity between the urban and rural India and hence the need for appropriate policies to address this issue. According to G S Bajwa (2012), the path towards technology-induced development in India, especially associated with ICT was first initiated by the Congress government under Rajiv Gandhi in 1984. He adopted informatisation of Indian society as an effective route to development, with massive programme of computerisation launched in public sectors as well as in the commercial undertakings, and administrative departments. A number of experiments, pilot projects and rural business initiatives on applications of ICTs in different sectors have been going on in India during the last two decades. Nath(2001), Gurumurthy(2006), Arun et al(2004) are of the view that one of the many potential of ICTs is improving the competence, usefulness and reach of rural (as well as urban) service delivery and ensuring the much needed transparency in government and business studies have shown that some of these initiatives have also contributed to the empowerment of rural women, even though, Indian women still face huge imbalances in the access and ownership to many of these technologies.

ICT BASED ENTERPRISES

"Rapid growth of the Indian IT ad ITEs sector has created a lot of new jobs in the country. Over the last decade, the IT and ITes industries in India has grown from 8.7 billion US dollars to 64 billion US dollars. Currently 20 per cent of India's export earnings come from this sector. About half of all incremental employment created for 30 per cent employment in this sector, through a vast majority of them are relegated to call centre jobs and other lower end jobs of the BPO sector"[4]. This shows the huge leap which the IT sector has taken in both rural as well as urban areas. But the development projects mostly concentrate on the urban areas, hence leading to a growth of IT education and IT educated individuals from the urban areas.

But very recently "more and more IT and BPO companies are moving to rural areas to beat the global competition, cut costs ride out the recession, low cost of operations and lower employees' attribution levels are the key benefits these companies derive from their rural operations. Call centres and medical transcription companies are slowly moving to tire-III areas where they can cut costs"[5]. There has to be a holistic development not only in the urban areas but also the rural areas as well. Singh (2010), says that there are currently about 50 rural BPOs, employing about 5,000 staff and more are yet to be established, according to Nasscom. This is a positive step which is being taken up by the government in order to provide employment opportunities to people of the rural areas as well, thereby increasing their living standards.

"Desi Crew Solutions is a rural BPO company that started operations in February 2007, after two years of testing at the rural technology and business incubator of IIT Madras. It operates on a decentralized BPO modal that provides competitive outsourcing solutions to clients while working as a profit making social enterprise giving employment opportunities to the educated villagers. This 120 people company runs 6 village centres in Tamil Nadu and 70 per cent of its staff is women. A 12th class degree and basic knowledge on computer is the minimum requirement for consideration for employment at Desi Crew"[6]. Desi Crew has made appositive attempt by providing employment opportunities to the rural educated villagers. Since, the majority of the staff of Desi Crew are women, it is a very bold and positive attempt to break the old mindsets of the people regarding the status of women. Once

[4] Available online on: [http://www. crispindia.org/docs/4%20CRISP%20Working%20Paper-ICTs%20and%20Empowerment%20of%20Women.pdf] [Accessed on 12th March, 2009].
[5] Ibid(p.40).
[6] Ibid(p.40)

the women become economically sound, they will have a voice in their family matters as well, in decision- making and break the social taboo that women are meant to stay at home and look after the family.

'Kalyani' which is the popular health magazine programme of Doordarshan is also funded by the Health and Family Welfare Ministry and has been doing well in creating health awareness about diseases like, malaria, tuberculosis, reproductive health issues, tobacco and alcohol use, sanitation and hygiene, and HIV/AIDS. "Use of videos for disseminating new information and knowledge is not new. Its immense potential for women's empowerment was first found in India by Self Employed Women's Association (SEWA). Video SEWA (VS) was established as a means to provide training to the members of SEWA and to motivate, mobilize and strengthen the existing membership of SEWA through the use of video recordings and tapes. Since 1988 video SEWA has produced countless tapes and more than a hundred programmes of organizing, training and advocacy. SEWA is currently working in 15 districts of Gujarat, nine states in India and three other countries"[7]. SEWA has been immensely successful in empowering women by the use of the audio-visual medium like videos which are very effective in putting impact on the viewers. It aims in making women economically independent which will inturn change their status in society as well. SEWA has been gaining momentum across the years and has spread to different states across the country and world.

"The Kudumbasree poverty eradication project of the government of Kerala is being implemented in the state through the local bodies since 1998. The project gives importance to women and children from Below Poverty Line (BPL) families and is being implemented through neighbourhood groups, which are formed by 15 to 40 members"[8]. Poverty is one of the major reasons for the worsening conditions of women, especially the women who are Below Poverty Line. The Kudumbashree scheme which focuses particularly on women and children is attempting to bring back these excluded groups to the mainstream. Pillai and Shanta (2008), are of the similar view and say that Kudumbashree has been successful in encouraging and training the poor educated women from the neighbourhood groups to form micro-enterprises based on ICT applications. They say that, each group was encouraged to set up micro-enterprise for data entry, data processing, and IT education. This effort has been helpful in guaranteeing employment to a large group of people from the rural areas.

[7] Ibid(p.34)
[8] Ibid(p.40-41)

Arun et. al. (2004), are of the view that the most important and positive factor that favour women's entrance into the IT industry has been the support from Kudumbashree officials in the form of financial, technical and managerial help. They said that, major help came in the form of training both in hardware and software. This gender based interventions in ICT initiatives involving significant state intervention brought about positive changes for livelihood outcomes and empowerment of poor women. This has been one of the positive and gender sensitive approach in the field of ICT.

"Under the rural e-seva centers, initiated by the Government of Andhra Pradesh in West Godavari district, 20 are managed by women. Women from SHGs took loan to set up this initiative (computer, printers, digital cameras, scanner, photocopy machine)"[9]. Exposure of women in the field of ICT is an extremely important and positive step taken by the Government of Andhra Pradesh. Providing control in the hands of the women makes them feel empowered and they also get an opportunity to learn a new technology.

Chatterjee (2010), says that the establishment of CSCs is also opening up employment opportunities for women in rural villages. For instance, Srei-Sahaj, the company partnering with the Government of India for setting up and operating 27,000 CSCs in seven states of India, has 1200 women entrepreneurs today, who are mostly housewives with no previous experience of running a business. The services offered in these centres include photography, government form submission, electricity and telephone bill payment, mobile top-ups, railway reservation, LIC premium collection, and the like. This is a positive step taken up in the process of empowering women, not only economically but also socially.

INDIA's DIGITAL DIVIDE

According to TRAI (2011) report, it can be seen that regardless of several policy initiatives to promote rural infiltration, the total tele-density (the number of telephones both landline and wireless put together in use for every 100 individuals living within an area) in India is only 60.99 while in urban areas, the total tele-density is 137.25, it is only 28.42 in rural areas which needs serious attention in order to reduce the connectivity problems in the rural areas which is very rampant.

[9] Ibid(p.43)

Although, the mobile subscriber base use has improved rapidly in the past few years, the rural mobile tele-density is only 27.32. The rural mobile tele-density in states such as Assam, Bihar, Jammu & Kashmir, Madhya Pradesh, Odisha, Uttar Pradesh and Uttarkhand are far less than the national rural mobile tele-density (ibid). The India online 2009 Report (2009), says that there are 46.49 million internet users in India as on January 2009, of this 39.0 million or 84 per cent of online Indian come from the urban areas and 7.49 million or 16 per cent comes from the rural areas. The same study noted that the internet use has "slowed down" in India. The India online 2009 Report (ibid), further says that, lack of meaningful local language context, the affordability factors, lack of unified transacting and buying online and the failure of cybercafés to mass mobilize its adoption and usage have all contributed to this slow down. As per 2011 Census, the rural female literacy rate in India is only 58.8 per cent[10] and this also constrains women from accessing print media as well as portals.

Chandrasekhar (2004), says that, we can find the digital divide present in the case of traditional ICTs such as radio and television as well. The percentage of households owning a radio or television is lower in rural areas as compared to urban areas. Sridhar and Singh (2010), say that inequality in the ownership and access to basic goods and services tends to reflect the inequality in the distribution of income-generating assets, particularly land. TV ownership was obviously low in villages where access to the electricity was low.

Singh (2010) says that the concept of digital divide has changed over time. Initially it was considered as connectivity problem but during the last few years, it has been broadened to include capacities and skills required to use ICTs. The digital divide (according to Singh, 2010) represents the following four kinds of gaps:

a. gap in access to use ICT.

b. gap in the ability to use ICTs.

c. gap in actual use.

d. gap in the impact of use.

India does not have a draft National Policy on ICT as such. Almost every State has its own State policies to carry out or channelize the development process through the medium of ICT. In 2012, National Telecom Policy was drafted.

[10] Available online on [http://censusindia.gov.in/2011-prov-results/paper2/data_files/india/Rural_Urban_2011.pdf] [Accessed on 16th June, 2013].

NATIONAL TELECOM POLICY- 2012(NTP- 2012)

"The primary objective of NTP-2012 is maximizing public good by making available affordable, reliable and secure telecommunication and broadband services across the entire country. The main thrust of the Policy is on the multiplier effect and transformational impact of such services on the overall economy"[11]. The National Telecom Policy is a positive approach initiated by the Government of India in order to strengthen the development agenda through equity and inclusive nature. The basic agenda of this policy is to provide services at a cheaper rate to the citizens of this country. It also talks about the support from private sector in lending a helping hand for the smooth functioning of the various schemes and projects. The Government of India needs to draft a National ICT Policy as well for laying down clearly demarcated guidelines concerning the various ICT mediums which are very essential for the development of our nation.

GOVERNMENT OF ODISHA-DEPARTMENT OF INFORMATION TECHNOLOGY (ICT) POLICY, 2004

The Government of Odisha has drafted its ICT Policy in 2004. This policy aims at providing transparency, inexpensive access to information, door-step delivery of various services, increased employment and high economic growth and export turnover. In order to carry out or fulfil its objectives, it has established certain agencies[12] like:

1. State Information Technology Services Board (SITSB) which is the policy making body.
2. Department of Information Technology, which is the administrative department in Government of Odisha.
3. Orissa Computer Application Centre (OCAC), which is the directorate of the Information Technology Department.
4. Software Technology Parks of India (STPI), Bubaneswar which is responsible for the promotion of export oriented IT units in the state.

The various strategies followed by the Government of Odisha (highlighted in The ICT Policy of Odisha, 2004) for carrying out the various programmes includes e-governance

[11] Available online on:[http://www.dot.gov.in/ntp/NTP-06.06.2012-final.pdf] [Accessed on 18th February, 2011].

[12] Available online on:[http://www.odisha.gov.in/userfiles/file/ICT%20Policy.pdf] [Accessed on 19th February, 2011].

which aims at providing equality of opportunity to access information and services which will further help in bridging the gap between urban and rural population, between the rich and the poor and between the less and the more privileged groups. Hence, the government procedures in all departments will be re-engineered to use the ICT tools for attaining speed, transparency and effectiveness in implementing government decisions and making them reach the people. All the departments and important administrative set-ups of the government will be connected to the Secretariat Local Network (LAP) and computerization of district and field level offices of all departments will be taken up at its earliest. The departments connecting with important public services and utilities will also be automated in their functioning and suitable public interface will be designed to provide the services.[13]

The Policy document further highlights on the fact that, in order to provide access to information, the state portal can be used by the public for reference on Government information such as various cabinet decisions, forms, procedures, programmes, projects, schemes, tenders, quotation calls, notice, etc. Various designated information offices in individual departments and offices shall also be responsible to provide all information needs to the Government as well as the public.

According to The ICT Policy (2004), Government of Odisha, the citizens will be able to avail through the state government portal various services such as the payment of utility bills like electricity bills, water and sewerage bills, telephone bills, holding tax, filing CST returns, exam fees for school final, exam fees for JEEs, filing IT returns, registration of birth and death etc. The information kiosks will be responsible for the provision of these services to the public. But unfortunately, from the field study, it was found that these services have not been able to reach the rural folks who lack the knowledge and facilities to use the services provided to them. Even in Bhubaneswar, majority women lack the awareness regarding the facilities being provided to them which makes them ignorant in timely availing these opportunities.

Human Resource Development through e-literacy is also one of the major objectives cited in the ICT policy of Odisha.[14] It says that, all government employees will be trained on how to use computer and its applications. The recruitment rules in the government will be suitably

[13] Ibid. p.5
[14] Ibid.p.5

amended in order to ensure that the future appointments in the Government will require minimum entry level of knowledge on computer applications. The government employees will be permitted to take up courses on skills development in IT related fields leading to award of Diploma and Degrees from recognised educational/training institutions. Respective departments will be responsible to reimburse the course fees paid by the employee after passing qualifying examinations and on production of relevant certificates to the authorities.[15] It also says that the computer centres and kiosks will be extended to the village level users and village panchayat offices, wherever necessary. There it will be occupied with a community computer and internet connectivity and the village level users will be trained as well. It highlights on the use of local language interface in using computers and offering of e-services through the state government website which will be made available to the users for convenience. Government will provide aides at selected access points to guide citizens with user convenience.[16]

The state ICT Policy also talks about its work in the field Education and Training by the provision of computer training programmes to children from primary school level. English will be in the school curricula from class-I and the coverage of schools will be suitably extended from 400 to more. The inclusion of English language in the school curricula will help the students in understanding computers, etc easily. It also says that training will be provided to all school teachers on the usage of computer and IT applications and special training will be given to teachers-in-charge of computer education under multiple schemes. Regular Training programmes will be held for the teachers to keep them updated.[17]

The policy document further says that internet connectivity and wide area networks will be used to connect all the universities and college student related services and facilities such as online education, career counselling, online selections and interviews, and the like can be made available through this network. It further highlights on the fact that with the views of experts, a student-friendly curriculum will be prepared which with the help of IT education and training will help in providing suitable jobs to the young graduates and professionals.[18]

[15] Ibid.p.6.
[16] Ibid.p.6.

[17] Ibid.p.6.

[18] Ibid.p.7.

The policy also talks of IT manpower planning, capacity building and infrastructure building through the establishments of more number of IT-parks, development of data centres at district levels, establishment of information kiosks, city infrastructure, communication infrastructure, etc. In the health sector, telemedicine facility is to be expanded to all hospitals up to the level of public health centres located in the block level. Wide Area Network/Video Conferencing Network is to be connected to all District hospitals and the Medical Colleges for exchange of information and sharing of skills. This effort by the Government of Odisha has not been successful even in 2014. At the grassroot level, during the course of the field study, it was found that the villagers of the selected Gram Panchayats get information about health, market prices of goods and commodities, agriculture related querries with the help of the CIC's established by IRMA-India. This, very clearly reveals that the development in the sector of ICT is quiet slow and needs to fasten up.

When it comes to the aspect of technology support, the ICT Policy (2004) of the Government of Odisha talks of building alliances with technology leaders like Microsoft, Oracle, Sun Micro Systems, IBM in both the government as well as the private sectors. It highlights on the steps that need to be taken to establish national level institutes in areas like e-governance, e-commence, networking, multimedia and animation. The ICT Policy also talks of community building by taking the views and opinions of industry associations like NASSCOM, etc. It also talks of the construction of a think tank which will discuss on policy issues and provides advisory feedbacks. A CIO(Chief Information Officer) Forum is established as part of the ICT policy which updates the information of the government web pages. But the success in actually putting these efforts into practise still remains questionable.

GOVERNMENT INITIATIVES

In order to develop the IT sector in the state, the Government of Odisha has undertaken several initiatives by declaring IT and ITEs units as public utility services under the provisions of the Industrial Disputes Act, 1947. They are allowed to work in their shifts as continuous processing units. The IT/ITEs units are exempted from the clearance and routine inspections of the controlling and regulatory authorities of the state governments such as Labour Commissioner, Director of Employment, State Pollution Control Board[19], Inspectorate of Factories & Boilers are eligible for self certification to the labour, ESI and

[19] Ibid.p.11.

EPF authorities under the provision of certain central and state government Acts such as the Factories Act 1948, Contract Labour (Regulation & Abolition) Act 1970, Employees State Insurance Act 1948, Maternity Benefits Act 1961 etc. It is further provided exemption from the payment of sales tax for a period of five years from the date of their first billing. Important IT buildings infrastructure such as IT parks, STPI complex will be free from power cuts. They will be exempted from the payment of electricity duty as per the provision of the industrial policy of the government. They will be exempted from clearance from electric inspector for approaching contract demand of load and appliances to be fitted in an IT unit[20]. These incentives are some of the positive steps taken by the Government Of Odisha to promote ICT and ITE's in the state. These steps will certainly act as motivators for the companies to invest on ICT and ITE's in Odisha. Incentives work positively in drawing the attention of various IT companies to come and invest in Odisha.

ROLE OF OCAC[21]

Odisha Computer Application Centre works as the agency for computerisation of the government departments, etc. In addition, it has been given the power to function as the Directorate for information technology in the state. Following are the major functions which will be looked after by OCAC:

i. Computerisation of all government departments.

ii. Training to new users of computer hardware and software and upgrade the skill level of existing users in the government for which necessary funds will be provided by the department's budget.

iii. Increasing the visibility of the state as a destination of choices for all investments from investors.

iv. Designing, hosting and maintaining websites of government departments.

v. Designing, hosting and maintaining the official information portal of the government.

vi. Implementing, coordinating and monitoring all schemes of the state government in the IT department pertaining to IT, ITEs and communication sector.

vii. Maintaining hardware and software resources of all government departments.

[20] Ibid.p.12.

[21] OCAC stands for Odisha Computer Application Centre.

viii. Planning and formulating strategies and policies for the government so that the benefits of IT reaches the people. It also focuses on public-private partnership as and when required.

ix. Setting up of an adequate IT infrastructure in the state on the basis of Build - Operate - Transfer (BOT), Build-Own-Operate - Transfer (BOOT) and Build-Own-Operate (BOO).

x. Outsourcing of technologies and IT services that are not available in the state and work back to assimilate, absurd and develop the technology for the same in the state.

xi. Collaborating with technology leaders to bring in new technologies to increase the local skills level.

xii. Promoting and establishing institutions of excellence in the state in the IT, ITEs and communication sector to create world class facilities for training and education [22].

ITEs POLICY

According to The ICT Policy (2004:15), Government of Odisha, "A varied range of services including customer interaction services, financial and accounting services, transcription/translation/localisation services, website services (content data animation), GIS, engineering and design, HR services, remote education/data search, integration and management/ market research, consultancy and management, etc. have been identified as IT enabled services (ITEs)"[23]. The ITEs are those services mentioned earlier where IT can be used to make the work in these sectors quick, error-free, easy and transparent.

IT LITERACY PROGRAMME IN SCHOOLS/COLLEGES

It is a very important step taken up by the Government of Odisha. The policy says that it is necessary for the establishment of IT education to be introduced right from the primary school level because this will establish the required level of familiarity of job-seekers and make them employable with the minimum educational background. It also talks of introducing knowledge on general maintenance and repair of IT hardware and overall knowledge on networking to students at school levels. Courses on ITEs related topics shall be introduced in selected graduate colleges as well[24].

[22] Available online on [http://www.odisha.gov.in/portal/Plan_policies/pdf_data/ICT_Policy.pdf] [Accessed on 13th January, 2009]
[23] Ibid(p.15).
[24] Ibid(p.16).

Inorder to compete with the outside world, there is a need to introduce IT education right from the schools. Through the medium of ICT, students can access information from all around the world which will help in broadening the horizon of their knowledge and understanding. They will also be able to learn about different cultures and languages. In Odisha, especially in the rural areas, this has not been achieved due to the lack of proper infrastructures and fundings.

TRAINING

The policy also talks of providing training facilities on e-CRM which will be made available in the state from experts in the field as most ITEs involve customer interaction services. Training on e-commerce activities including sales and purchases through internet, transitive processing, security issues, web services shall be made available through government agencies. The training will be provided free of cost to entrepreneurs selected for information kiosks and BPO complex units under self employment schemes[25].

IT and ITEs require proper training which leads to effective service delivery. Customer Relationship Management training will be very beneficial to the entrepreneurs in dealing effectively with the customers which will ultimately result in a profitable output for them. The proposed step by the Government of Odisha is a positive step because proper training is very crucial for the smooth functioning of any venture.

INFRASTRUCTURE

In order to carry out the various services in the IT sector, infrastructure establishment is very essential. Fortune towers is an important IT building infrastructure which was constructed by IDCO at Chandrasekharpur, Bhubaneswar which offers about 3 lakh square feet of ready-to-occupy space with all IT infrastructure for new IT units and for expansion programmes of large IT/ITEs companies of the country. An IT incubator facility namely BPO complex is under implementation on the available IT building infrastructure at Bhubaneswar. Adequate connectivity for voice and data transmission has been sought to be provided through TPI, BSNL, VSNL and other local ISP to the ITEs units[26].

Since infrastructure is very essential for carrying out various IT and ITEs, it is important for the Government to establish a sizeable number of infrastructures. This will result in not only the smooth functioning of the existing infrastructures but also will help in generating

[25] Ibid(p.16).
[26] Ibid(p.16-17).

employment opportunities for many people in the new infrastructure buildings as well. Hence, there is a need for more number of IT infrastructures in the state of Odisha.

POLICY INCENTIVES

It talks about the provision of all the incentives that are available to the IT industries to be available to the ITEs industries as well. The ITEs will be exempted from rent upto 3 years. An annual cash incentive to ITEs units having minimum 128 kbps data/voice connectivity will be given for creation of more than 50 seats and at least 50 per cent turnover from export market shall be eligible for this incentive[27].

The National Telecom Policy- 2012 does not mention about any particular clause as to addressing the information needs of both rural and urban women in particular. But it does talk of providing reliable and affordable broadband access to rural and remote areas where the access will be open, non- discriminatory and technology neutral. It also talks of providing area specific services and applications and region specific content in regional languages which will be very helpful to women who are not fluent in the medium of English.

The Government of Odisha does speak of a wholistic and futuristic development through ICT and by using the various implements of ICT. But it is a general and well known fact that women in India are still lagging behind men in many aspects and rural women are further more disadvantaged, hence they need more attention. But there is a lack of a comprehensive policy for them which should exclusively deal with their problems, their needs and demands and ultimately focus on their development which is an important matter of concern. Thereby, the methods of catering the digital divide aspect is lacking in the policy framed by the Government of Odisha. Lack of adequate research on women's access to ICT's and lack of data acts as constraints in improving women's access. It is the men who significantly benefit from these initiatives because usually they are the ones who take decisions, marketing and accessing of government schemes.

There is a need to have a clear understanding on the aims, objectives, missions and the work done for women in both rural as well as urban areas by OCAC and IRMA- India which are the two organizations selected for the present study by the researcher. The section below will deal with the activities that are being carried out by OCAC and IRMA. It will also discuss at length the various projects that these organizations have undertaken in both urban as well as rural areas respectively. How these organizations offer services related to ICT to both the

[27] Ibid(p.17).

urban as well as the urban masses in the state of Odisha. It will attempt to highlight the missions, goals, objectives and the success stories of the organization that these organizations stand testimony to.

OCAC AND IRMA INDIA: AN EXPERIENCE

ODISHA COMPUTER APPLICATION CENTRE, BHUBANESWAR[28]:

OCAC was formed as a part of the Odisha State ICT Policy of 2004.It is chosen as the Technical Directorate of Information Technology Department, Government of Odisha and has evolved over the years as a centre of excellence in Training, IT solutions and e-Governance. It has contributed to the stable growth of IT in the state. It provides web-based solutions for online tracking and subsequent monitoring of functioning of all the 41697 Anganwadi centres in the state.

SCHOOL AND MASS EDUCATION DEPARTMENT – E-SHISHU (CHILD TRACKING SYSTEM-2005)

Sarva Shiksha Abhiyan (SSA) of Government of India is an initiative to provide free and compulsory quality education up to age of 14. Odisha Primary Education Program Authority (OPEPA) launched the project '**e-shishu'** to track both school going and out of school children of the state within the age group of 0-14 yrs and bring them back to the mainstream of schooling. Project e-Shishu was conceived by OPEPA and implemented by OCAC in the year 2005. A database of 10.8 million children (0-14yrs) of the entire state was generated using Intelligent Character Recognition (ICR) Technology. It is a huge effort by the Government of Odisha to counter illiteracy and drop-out rate of school children who drop out of schools because of various economic, social and geographical reasons(school located far from home). Web-enabled application software was developed and enabled through the portal www.opepa.in .

The project received the following awards[29]:

- Fifth India Tech Excellence Award
- Best Government Website Award in the "10th National e-Governance Conference-2007".

[28] Information received from the OCAC office in Bhubaneswar and the OCAC website.
[29] Available online on [http://www.ocac.in/ViewDetails.aspx?glinkid=GL000&plinkid=PL003][Accessed on 15th July,2009].

- Prime Minister's Award for "Excellence in Public Administration" for the year 2006-2007.

The reasons for the success of the e-shishu project is that it is a tremendous effort by the Government to track down each and every child who have already dropped out of schools and bring them back to the schools again, because drop-out rate needs to be countered which hinders the overall development of the children. This project also focuses on tracking down the school going children as well and focussing on their needs and problems and providing various positive inputs, so that they do not drop out of school. It also emphasizes on the quality of education which is very essential for the future of the children.

PANCHAYATI RAJ DEPARTMENT BETAN (PAYROLL INFORMATION SYSTEM)

The Payroll Information System has originally been developed for Panchayati Raj Department which was later on customized as per the requirements of various Departments of the Secretariat. The web based software named BETAN has been implemented in 314 block offices, 30 DRDAs, all Rural Development Department Divisions across the state and also all the departments within State Secretariat. It has been planned to be implemented in all the line departments across the state[30]. This information system would help in bringing transparency in the Government system.

PREPARATION OF ELECTORAL ROLLS AND PHOTO IDENTITY CARDS (EPIC PROJECT)

As the State-level agency of the Election Commission of India, OCAC has developed a highly effective package for the creation and management of the electoral roll database and preparation of Photo-ID cards[31]. This will help the public in getting Photo-ID cards easily, thereby reducing the pending works which earlier used to accumulate.

W&CD[32] DEPARTMENT, GOVT. OF ODISHA

To ensure transparency and accountability in the implementation of all the 26 schemes of W&CD Department, a Web based pilot project “Scheme Information System” incorporating

[30]Ibid.
[31] Ibid.
[32] Women and Child Development Department

functionalities such as data updating facility, data browsing and reporting, grievance management, scheme wise annual fund sanction and release has been developed and implemented by OCAC in Koraput district. The district and block level officials have been trained on the software and the application is being used by the Department for dissemination of information as well as monitoring of the schemes. The same system will be rolled out in all the districts of the state in the next phase[33].

FOOD SUPPLIES AND CONSUMER WELFARE DEPARTMENT – PDS INFORMATION SYSTEM

PDS Information System is to maintain transparency and accountability into the Public Distribution System through web publication of information on District/Block wise allotment of food grains, distribution of food grains through the distribution network of Storage Agents, Retailers, Wholesalers and Sub-wholesalers, Publication of Beneficiary list and incorporation of Grievance management. This project was a pilot project for Nawarangpur district which can be accessed at www.pdsorissa.in . The initiative has been planned to be replicated in rest of the districts of the state in the next phase[34].

The customer care system has been implemented in Bhubaneswar Development Authority (BDA), under the administrative control of Housing & Urban Development Department, Govt. of Odisha. The Project is a web enabled Integrated Software Application to provide a Single-Window Solution relating to allotment of various Properties – Residential and Commercial Housing Complex Projects to customers with following features: Web-based, Customer-Centric Information Portal, Web Application, Focus on Customer Orientation Programme and Counseling, etc. Another government nodal body named OTDC (Odisha Tourism Development Corporation) looks after the tourism development in the state of Odisha. It provides tourist information as well as other ancillary services like boarding and lodging facilities, tour packages and transportation services. Previously tour package bookings and hotel reservations were being done manually and tourism related information was not available at a single location. The billing and inventory management in various hotels run by OTDC was also manual based. The solution provided to OTDC is a tourism portal having on line hotel booking facility with Hospitality Management System (Front Office, Food & Beverages, Billing & Accounting and Inventory Control) integrated into it.

[33] Ibid.
[34] Ibid.

The Women & Child Development Department plays an important role in formulating policies and implementing schemes for development and welfare of children (0-6 years), children in primary school, adolescent girls, women, widows, pregnant women, and lactating mothers, old, infirm and destitute in the state. The objective of the project e-pragati is to provide a web based solution for online tracking and subsequently monitoring of the functioning of all the 41697 Anganwadi Centres (AWCs) in the state thereby ensuring transparency and accountability in the system[35].

Under the Health and Family Welfare Department**,** SCB Medical College and Hospital (SCBMCH) has been computerised and is now providing round the clock service to patients. Each day 3000 patients (approx.) visit the OPD of SCB Medical College. The objective of computerization of SCBMCH is to provide better facilities by streaming patient registration process. Wide Area Campus Network has been established for implementation of the on-line Registration System connecting OPDs with all departments. Application software for this purpose i.e. "OPD Patient Registration" has been developed and implemented. OCAC has been working to computerise the land records. Post-computerization, it has become convenient to update land records. All land records along with software of Mayurbhanj district, except Karanjia tehsil, were updated till March, 1995, and handed over to respective tehsils in March, 1997, while those for Baripada (17 RI Circle, 1059 Villages), Badasahi (7 RI Circle, 224 Villages) and Rasgovindapur (2 RI Circle, 72 villages) in Mayurbhanj district have been submitted to different tehsils.

ACHIEVEMENTS

OCAC has received National e-Governance Bronze Award for the creation and development of the website: 'www.opepa.in' (OPEPA - Odisha Primary Education Authority) in the 10th National e-Governance Conference, 2007. The Project e-Sishu has won the state of Odisha, the 5th India Tech Excellence Award in 2006, etc.[36],

SERVICES

OCAC has contributed to the creation of infrastructure, manpower and implementation of Projects in many government departments and public sector undertakings in Odisha, like, system analysis,

[35] Ibid.
[36] Available online on [http://www.ocac.in/ViewDetails.aspx?glinkid=GL000&plinkid=PL004][Accessed on 15th July, 2009]

software designs, training, etc. It also offers various computer courses and project works for MCA/BE students. It also offers summer training programmes for BE/B.Tech. students. It offers courses for learning foreign languages like Japanese, Chinese, Spanish, German, French, Russian, etc. It also imparts Corporate training as well[37].

3 WINGS OF OCAC[38]

1) Administrative Wing: It consists of 16 employees with Shri. Madhusudan Padhi, IAS, as the Chairman-cum-CEO of this wing.
2) Technical Wing: It consists of 31 employees with Mr. Manoranjan Mishra as the Deputy General Manager of the wing.
3) Support Wing: This wing consists of 12 employees who are basically non-technical and are engaged as the care-takers of OCAC. The total number of staff comes to 59.

After visiting the OCAC office and collecting information about the various works being undertaken by OCAC from its office as well as is official website, the researcher decided on collecting information on the second organisation, IRMA- India.

ODISHA STATE VOLUNTEERS AND SOCIAL WORKERS ASSOCIATION(OSVSWA)[39]

OSVSWA is the parent organization of which IRMA- India is the ICT division.It is registered under the Indian Societies Registration Act as a non-profit society in 1981-82 and it is also registered under the Foreign Contribution (Regulation) Act in 1994.The mission of OSVSWA is to promote volunteerism, voluntary action, and people-centered development towards a just, peaceful, harmonious and sustainable society.

WORKING OBJECTIVES[40]

It works as the pioneer in the people's organization as a facilitator and catalyst "in the social change process" by formation of voluntary societies, groups etc. through affiliation and association. It also works towards the provision of education, training, and management to the affiliated bodies, the voluntary societies in their socio-economic development activities, rural integrated development programmes, social welfare administration, social services and development alternatives. OSVSWA undertakes social development projects in the interest of the

[37] Ibid.
[38] Information received from OCAC office, Bhubaneswar.
[39] Information from the IRMA- India office in Bhubaneswar which is the ICT division of OSVSWA.
[40] Ibid.

public and mainly need and community based with the twin concept of "Development through Participation" and "Development through Sustainability" in the areas of alleviation and reduction of poverty and unemployment.

It provides project consultancy, works as project coordinator, and undertakes action research in the joint collaboration with societies, government agencies in Centre and State or with national and international bodies working in the same field: technical, non-technical, financial and non-financial etc. OSVSWA works for the promotion, propagation and cultivation of rural industrialization, appropriate rural technology, science and technology, enterprise and entrepreneurship, art and culture, conservation of nature and natural resources and the environment, information and mass communication, mass education agriculture and farming, community health service, rural water and sanitation, population & family planning and natural disasters, etc.

It not only undertakes action-oriented research activities of developmental nature in the cause and welfare of humanity of international concern through participatory research and voluntary action irrespective of caste, creed, and colour in the State of Odisha but also promotes peace, justice and human rights and works as a non-profit and non-political organization with right to affiliate, merge, amalgamate and associate with like organizations.

INFORMATION RESOURCE MANAGEMENT ASSOCIATION-INDIA (IRMA-INDIA)[41]

IRMA-India is the ICT division of Odisha State Volunteers and Social Workers Association (OSVSWA), 1980.

IRMA-INDIA and CONNECTED NATION PARTNERSHIP

On October 11, 2005, during the Rural Telecommunication Congress 2005 held at Lexington, Kentucky, Connected Nation (Connect Kentucky) announced a partnership with IRMA-INDIA, an independent group dedicated to the growth and expansion of technology as a means of economic and cultural development in India.

Although India has the fifth largest Telecommunications Network in the World, most rural areas have been left out of the information explosion. More than 10,000 Indian villages lack electricity and few have Internet access. IRMA-India, the ICT division of OSVSWA, was

[41] Information Received from IRMA Office, Bhubaneswar

founded by a team of like minded IT professionals, engineers, and development economists for promotion, dissemination and application of information and communication technology as a means of helping rural communities achieve sustainable socio-economic development. The organization designs information and communication Projects like, Community Information Centres/Techno Cottages, that encourage local people to educate themselves and create their own business.

Similarly, Connected Nation (Connect Kentucky) seeks to reverse the technology deficit in rural areas. Having similar missions, the two organizations found themselves to be natural partners. They started a Pilot Project called "Community Information Centre" in a cluster of rural villages in Odisha in order to provide knowledge and job skills to India's poor, rural families, and women in particular. The Project involved setting up of 26 CIC's in small villages in Khalikote Block of Ganjam District and Nuagaon Block of Nayagarh District of Odisha. Each of these CIC's are equipped with computers with Internet connections, Printer, Digital camera, Web-camera, a small library with books, newspapers and other materials. The centres are focused on providing information on subjects ranging from Government Schemes, programmes on various sectors like health, agriculture, and livelihood, etc.,

They have display boards outside the CIC's where they update information regarding the weather and market prices of various fruits, vegetables, meat and fish and also display some of the useful help-line numbers in local language.

They engage in awareness campaigns for spreading awareness regarding the CIC's and the way they can help the villagers. So far, 53 awareness campaigns have been organized. The CIC's remain open from Monday to Saturday from 9 a.m. – 5 p.m. and Sunday's are usually holidays. But during the awareness campaigns, even Sundays turn out to be working days for the C.I.C staffs.

They motivate local/primary school teachers and villagers between the age-group of 12-60 to come to the CIC's and learn to operate Computers and use Internet. Therefore, separate training timings have been fixed for the students and the teachers. Hence, the students and other villagers are now able to check train timings, exam results, book tickets online, and get other updated information about the State, Country, and the World.

FUNDINGS

The CIC's run on International Fundings (one of them is ST Micro Electronics, Geneva, Switzerland and also Digital Unify Lab, USA). For the smooth running of the CIC's a CIC Development Committee has been formed for each CIC's to look after the CIC's sustainability as well as coverage of other Government Programmes by taking the Sarpanch (Local Government Elected Representative), School Teacher, Local Leader and learned people of the programme area. The committee meets frequently and also helps during the CIC awareness campaigns which are being organized in villages.

The delegates from the funding organization visit the CIC's on a regular basis to check the growth and functioning of the CIC's.

IRMA-India is also currently working in Deuli Village, Nuagaon Block, Nayagarh District where the Project is named as "Techno-Cottage". It is also currently following the offline model in Chadeyapalli village of Dasapalla Block, Nayagarh District. They are following the offline model in this CIC because there is no electricity and telephone connection to this village which is a remote rural village. Hence, they try to provide information through the use of laptops but laptops cannot be used at a stretch for a long time.

The CIC's organized "Farmers Fair" (Krishi Mela) in collaboration with the Department of Agriculture and Department of Horticulture, Government of Odisha. They have videos of improved paddy cultivation and booklets on technical questions and answers on agriculture. They also organize "Education Fair". 25 students and 5 teachers have been identified for a continuous free computer literacy course for about 3 months.

IRMA-India has a total of 19 staff working in various capacities in the organization. Mr. Dilip Pattanaik is the Director of IRMA-India. Local youths are often selected from the villages to work for the smooth running of the CIC's by taking their help for conducting awareness campaigns, motivating villagers, etc., students from foreign universities also come and work as volunteers in the field as well.

SUMMING UP

This chapter starts with a glance on the National Telecom Policy, 2012 of India and the efforts that has been tried to attempt in reaching the rural masses and providing inexpensive networking facility to a large group of people. This chapter then goes on in looking at the Odisha state ICT

Policy,2004 which also has been implemented for the promotion of IT in the state. It then gives us a clear understanding about the two organizations OCAC and IRMA-India selected for the purpose of the research. OCAC is a State Government Organization and IRMA-India is an NGO. This chapter clearly marked out the aims, objectives, missions and goals of these two very different organizations with completely different methods of working, but the most important factor is that, these two organizations use ICT as a model for development in both urban as well as rural areas.

The forthcoming chapter will provide a detailed picture of the actuality of situations in the field with a description of the views and experiences of the women respondents from both Khalikote Block and Bhubaneswar N-6 areas. It will also provide us with the views of the Staff respondents of both OCAC and IRMA-India and make a comparative analysis.

CHAPTER- V

EXPERIENCES FROM THE FIELD

There is a need to know more about OCAC and IRMA – India and the kind of work they have been carrying out since their inception and how far has it been able to benefit the people of both rural as well as urban areas and especially women in particular. Segregation of women from the conventional economy and their lack of access to information because of societal, cultural and market constraints have led them to distance themselves from the worldwide pool of information and knowledge.

In order to empower the poor and the disadvantaged including women, organizations like OCAC and IRMA-India have been using the tool of ICT to reduce poverty, towards gender-sensitivity and towards bridging the digital divide.

ODISHA COMPUTER APPLICATION CENTRE (OCAC)

Keeping in mind the research questions-

1. What is the role played by ICTs in the lives of women in rural and urban areas towards socio-economic awareness and empowerment?
2. What is the extent of digital divide existing between rural and urban women due to differential provisioning and forms of patriarchy in both the regions?

A 3 pronged data collection was planned. Firstly, data collection was decided to be divided between two regions- rural and urban. Both the organisations' area of operations have been taken to constitute the rural site of data collection. N6 neighbourhood of central Bhubaneswar has been taken as the urban cite of data collection following the suggestions of / discussions with the OCAC staff. The third prong of data collection constituted of the staffs of both the organisation.

In both the sites, women respondents were asked to fill in written questionnaire and few selected respondents were followed up with intensive interviews. The questionnaire aimed at collecting data pertaining to patterns of user behaviour of various available ICTs among women. Besides the introductory and profiling questions, the questionnaire asked about the most common ways of accessing ICTS, the purpose of use of ICT, the level of independence and capability in women in accessing ICTs, the response of family and other community members to the same and lastly the usefulness and impact of the ICT in the lives of women if any. A set of questions were also presented to the men of the communities asking for their perception and views on the issue. In the in-depth interviews with the women respondents,

such points/topics as to the amount of time they spent in using the various ICT mediums, whether these ict mediums help them in any way or not and whether they get any support from their family, etc. were further explored in an informal set up.

The staffs of the organisation were interviewed in order to get an indepth understanding of the working of the organisation, the magnitude of the spread of ICT in the target areas and the institutional view of the problems and challenges involved in use of ICT for development, especially for empowerment of women

A total of 30 out of 59 staff members of OCAC were interviewed and their views were carefully noted down. The views of the respondents are divided into various categories: -

Table No. 5. 1: Sex of the OCAC staff members

Sex of the respondents	**Frequency**	**Percent**
Female	8	26.7
Male	22	73.3
Total	30	100.0

The above table clearly shows that out of the total of 30 respondents interviewed from OCAC, only 8 are female and the remaining 22 are male. This huge gap indicates that a few women go for technical education and thereby it largely remains a domain of men. The low representation of women clearly shows that there is a need for women to go for higher education and technical education which is quiet low in the State of Odisha.

AFFILIATIONS OF THE ORGANIZATION AND INCOME OF THE RESPONDENTS

When the staff of OCAC were asked about their annual income (which varies from person to person according to their designation) and whether they are satisfied with it or not, surprisingly all the respondents gave a similar answer that they are satisfied with their income(which ranges from 78,000- above 5 lakhs per annum) and for them having a State Government job was more important than working in private companies where jobs according to them is very uncertain. Moreover, the respondents replied that the work carried out by the organization is for the benefit of the people, especially the disadvantaged sections

and hence it is a great effort which the Govt. of Odisha has taken up and they are lucky to be a part of it.

SOURCE OF SPONSORSHIP/FINANCE

As OCAC was formed as part of the ICT Policy of Odisha in 2004, it is funded both by the State as well as the Central Government. All the respondents are well aware of this fact. The Odisha State Government also received funds from the Centre for certain projects like digitization of all Government offices, for projects which involve foreign stakeholders etc.,

PROJECTS ON ICT

When the respondents were asked whether OCAC had conducted any projects on ICT, then all the respondents gave a similar answer that OCAC has conducted many projects on ICT but none of them were sure about the number of times OCAC conducted these projects. But some of the projects which OCAC had initiated, as mentioned by the respondents are e-pragati, computerized voting machines (EVM's) computerization of various government departments, and many other departments like Panchayati Raj, Women & Child, Education, food supplies & consumer Welfare, etc.,

COVERAGE AREA OF THE ORGANISATION

All the staff members interviewed gave similar answers when they were broached with the question about OCAC. They all said that OCAC focuses not only in rural but also in urban areas as well. It focuses on the overall ICT related development, in both rural as well as urban areas. This shows that the organization staffs are conscious of the work and goals of the organization.

Table No. 5. 2: **Response of the rural/urban people towards ICT projects**

Response to ICT projects	**Frequency**	**Percent**
Satisfactory	20	66.7
Average	10	33.3
TOTAL	30	100.0

The above table shows that 20 (66.7%) of the respondents are of the opinion that the rural/urban people finds ICT projects to be satisfactory and 10(33.3%) of the respondents are of the view that the response was average. None of the respondents opined that the response was excellent on below average. They were basically neutral. They said that when they initiate any project, usually the turnover of the people is satisfactory because there is always a sense of curiosity amongst the people regarding the projects.

Table No. 5. 3: Level of participation of women in the projects

Women Participation	**Frequency**	**Percent**
Satisfactory	6	20.0
Average	24	80.0
TOTAL	30	100.0

In contrast to Table5. 2, Table 5. 3 shows that the participation of women is quite low in the projects on awareness campaigns. Only 6 respondents said that the participation of women was satisfactory. But 24 out of 30 respondents said that it was average. Women are generally less in number, when it comes to being part of projects on attending awareness campaigns. Many reasons have been highlighted such as shy nature, dominant male voice, lack of time, lack of interest and the very idea that they are stepping into a man's domain.

Table No. 5. 4: No. of women participants in the various projects conducted in the last 10 years

No. of women participants	**Frequency**	**Percent**
1000-5000	28	93.3
Above 5000	2	6.7
TOTAL	30	100.0

Table 5.4 proves true, the reasons cited in the previous section for the lower participation of women 28 (93.3%) of the respondents viewed that only 1000-5000 women have participated

in the last 10 years and only 2 respondents viewed that more than 5000 women have participated in the projects and awareness campaigns conducted by OCAC. This needs serious attention. More and more women-oriented projects should be taken up and more number of awareness campaigns might help in changing the scenario. The present study also points out on the fact that a special section particularly focussing on women issues and keeping a proper record on their participation should be set up. An increase in the number of staff, especially female staffs would help in effectively dealing with this situation.

Table No. 5. 5: Level of awareness on ICT amongst the rural/urban population

Awareness level	**Frequency**	**Percent**
Well aware	1	3.3
Partially aware	29	96.7
TOTAL	30	100.0

29 staff viewed that the respondents were partially aware about ICT and various ICT projects. In case of urban areas, this awareness level might be slightly higher because people of urban areas have better access to the various ICT mediums like T.V, Newspaper, Radio etc., since, the OCAC office is also located in Bhubaneswar, and hence it is a kind of an advantage for the urban dwellers. People from the rural areas are partially aware through the intervention of various ICT projects and awareness campaigns particularly focusing on rural areas.

Table No. 5. 6: **Views of the OCAC staff members on need for more projects on women**

Need for more projects on women	**Frequency**	**Percent**
Yes	29	96.7
Can't say	1	3.3
TOTAL	30	100.0

29 out of 30 respondents were of the opinion that there should be more projects on women both in rural as well as urban areas. This would help in bringing about more and more women participation in the projects, thereby making them conscious of gender equality in various projects and help them in becoming economically independent. This would help in making them equally aware, independent, raise their level of confidence and come to know about various policies and programmes meant for their welfare. According to Batliwala (1994), empowerment means not only a control over resources but also ideology. Similarly, UNICEF (1994), also brings under its purview, access to resources, raising awareness, participation, control and welfare measures as some of the determining factors of empowerment. Hence, welfare measures would become more successful if focus is made not only on mere participation but on the overall development of women by giving them control over resources and making them capable of taking decisions.

CHALLENGES FACED

When the respondents were questioned regarding the challenges they face relating to ICT and rural/urban women, then the answers were: -

(i) Rural Women: Shy nature, cultural practices, taboos, work pressure, lack of interest, disbelief on government organizations and lack of awareness. These reasons play as hindrances on the path of the OCAC staff in motivating rural women.

(ii) Urban Women: Work load, lack of interest and mostly dependence on private institutions work as hindrances in motivating the urban women.

FOLLOWING STEPS TO BE TAKEN TO ERADICATE THE PROBLEMS

(i) More projects should be undertaken to make these women(both rural & urban) aware of the provisions.

(ii) Advertisements should be done in a massive scale to spread the word.

(iii) More people –centred projects should be undertaken.

EXPECTATIONS FROM THE GOVERNMENT

Majority of the respondents said that:-

(i) There is a need for more financial support so that many more projects can be carried in a much larger scale.

(ii) There is a need to be inspired by the foreign models of ICT development models. This will give ways to innovative ideas and models for development.

(iii) More projects should come up which will focus on rural areas, so that the people of rural areas get equal change in the development process and benefit out of ICT projects.

INFORMATION RESOURCE MANAGEMENT ASSOCIATION-INDIA (IRMA-INDIA)

There are 19 permanent staff members in IRMA-India and all the 19 members were interviewed and their views have been carefully noted and analysed under the following categories:-

Table No. 5.1a: **Sex of the IRMA- India staff members**

Sex	**Frequency**	**Percent**
Female	6	31.6
Male	13	68.4
Total	19	100.0

Out of total 19 staff members of IRMA-India, only 6 are female and the rest 13 are male staff members. The lack of female staff members is a problem when it comes to interaction with women from villages because IRMA-India works in the rural areas. A few female staff are qualified enough to work in the field through NGO and IRMA has a few female staff, as it is difficult to find women staff members who are willing to work in the field.

AFFILIATIONS OF THE ORGANIZATION AND INCOME OF THE RESPONDENTS

When the staff of IRMA-India were asked about their annual income and whether they are satisfied with it or not, surprisingly all the respondents gave a similar answer that they are satisfied with their income because IRMA-India is an NGO which runs on donations and a voluntary organization cannot pay more. The staffs are fully aware of the funding of the organization and hence are satisfied with their income because it is the job of serving people which gives them more satisfaction and happiness.

SOURCE OF SPONSORSHIP/FINANCE

IRMA-India is the ICT division of Odisha State Voluntary and Social Workers Association (OSVSWA) which is the parent organization and IRMA-India was established during 2004. It runs on donations from abroad and individual donations as well. Since, it is a non-profit organization, it does not get any support or funds from the State on Central Government. It relies on funds and donations from foreign companies like Digital Unify- ST Foundation, Geneva and Connected Nation, USA with which IRMA-India has established joint ventures.

PROJECTS ON ICT

When the respondents were asked whether IRMA)India had conducted any projects on ICT, then all the respondents gave a similar answer that IRMA-India has conducted many projects on ICT. Project Community Information Centre (CIC) from 2007 onwards and project Techno cottage from 2010 onwards are the two important projects being carried out by IRMA-India. The staff members of IRMA-India seem to be well aware about the on-going projects.

AREA OF FOCUS

IRMA-India and its projects focus only on rural areas. This is because the goal of IRMA-India is to help the rural communities in achieving sustainable socio-economic development. The organization designs projects that encourage local rural people to educate themselves and create their own business.

Table No.5.2a: View of the IRMA- India staff on the response of the rural people towards ICT Projects

Response	Frequency	Percent
Satisfactory	14	73.7
Average	5	26.3
Total	19	100.0

The above table shows that majority, i.e., 14 out of 19 respondents are of the view that the response of the rural people towards ICT projects is satisfactory. Only 5 respondents said that it was average. None of the respondents viewed that the response was excellent or below average. They were neutral in their response. When a project is initiated, the turnover of

people is usually satisfactory because of the awareness campaigns involving local youths who are friendly with the local people and are also fluent with the local dialect.

Table No. 5.3a: View of the IRMA- India staff members on the participation of women in the projects conducted

Women Participation	Frequency	Percent
Satisfactory	3	15.8
Average	16	84.2
Total	19	100.0

16 out of 19 staff members of IRMA are of the opinion that the participation of women is quiet low in the projects or awareness campaigns. In rural areas, women are very shy in nature and because of the traditional roles and cultural practices, they feel awkward to go out openly in the public along with the men-folk. They are also always caught up tending to the needs of their family and hardly get time for attending such campaigns, etc.,

NO. OF WOMEN PARTICIPANTS IN LAST 10 YEARS

All the 19 respondents gave the same view that around 500-1000 women have participated in the last 10 years in the projects and awareness campaigns conducted. This is a very low turnover of women and it needs a very serious attention. As a consequence of patriarchal system in Odia society, majority of women were culturally conditioned to remain home makers and do domestic chores rather than strive to become empowered through ICT. The conservative mindset of not letting women go out alongside other men and village elders needs to be changed. Because rural women can benefit in a very significant way from the ICT enabled services. Here, there is a need to highlight the views of Simone de Beauvoir (1949:608), "Sometimes the 'feminine world' is contrasted with the masculine universe, but we must insist again that women have never constituted a closed and independent society; they form an integral part of the group, which is governed by males and in which they have a subordinate place". Women are a very much a part of the larger group consisting of both men and women and their individuality is lost because the larger group is male-dominated and governed by men. Women are expected to perform their roles in an ideal manner according to the rules set by men. Challenging the set notions of patriarchy is not expected of an ideal

woman. Hence, even though a woman wants to learn a new technology and use it, she is expected to do it under the set paradigms of patriarchy.

AWARENESS LEVEL

When the respondents were asked about the awareness level about ICT among the rural population, then all the 19 respondents said that the villagers are partially aware. Certain mediums of ICT such as mobile phones and T.V. are more in use by the villagers, because the prices of electronic goods have become cheaper. Hence, it provides opportunity to many people to buy them. But the rural folks are not well versed with the technicalities of these gadgets.

NEED FOR MORE PROJECTS ON WOMEN

All the respondents gave a positive answer to this question. This is because women's participation is low in rural areas. And hence, they need more motivation and more projects on women specifically might help in increasing the turnover of women participations. The IRMA-India staff also gave opinion regarding the benefits of ICT projects towards rural women. They said that the ICT projects will help the women respondents in making them computer literate, by providing information access on markets, government schemes and programmes, entertainment, health awareness, different designs of stitching, farming and animal husbandry, etc.,

CHALLENGES FACED

Illiteracy, shy nature leading to lack of openness and lack of time for such learning programmes are the main challenges which stop the women from visiting the CIC's or attending the awareness campaigns, thereby posing as huge challenges for the IRMA-India staff who have to struggle a lot to gain their confidence and motivate them to attend the awareness campaigns and visit the CIC's. One of the CIC staff said that, "they say yes, we will come but they do not turn up to attend the awareness campaigns, we feel shy, in front of the men and elders, to sit near them".[1]Another staff said that the women folk of the villages say that, "we will cook rice and go to fetch water and look after the children and in-laws, and if we go to attend the awareness campaigns, our work gets delayed".[2]

[1] As viewed by one of the IRMA-India field staff member on September 17th, 2012.
[2] As viewed by one of the IRMA-India field staff member on September 14th, 2012.

FOLLOWING STEPS TO BE TAKEN TO ERADICATE THE PROBLEMS

(i) More awareness on equality using ICT as a tool, i.e., video and audio.

(ii) By providing adequate information to the villagers as and when required by them. This will raise their trust on the CIC's.

(iii) Separate training programs to be conducted for women in order to increase the number of participation.

EXPECTATIONS FROM THE GOVERNMENT

Majority of the respondents are of the opinion that if the State Government integrates and converges the government programmes through the CIC's established by IRMA-India, and then it would help them reach more people.

FIGURE-5.1 : COMPARATIVE ASPECTS OF OCAC & IRMA-INDIA

Sl. No	DATA	OCAC	IRMA-INDIA
1.	Year of Establishment	2004	2004
2.	Registered under	Formed as part of Odisha State ICT Policy, 2004	Registered under Indian Societies Registration Act in 1981-82 and Foreign contribution (Regulation) Act in 1994- OSVSWA(Which is the parent organization of IRMA)
3.	Geographical Area	Both Rural & Urban area	Rural Area
4.	Mission	Designated as the Technical Directorate of Information Technology Department, Govt. of Odisha and has evolved through years as a centre of excellence in Training, IT solutions and e-Governance.	To promote, application and dissemination of Information and Communication Technology (ICT) among the poor mass for their access to information on agriculture, health and

			education as well as their sustainable livelihood.
5.	No. of Staff	59	19
6.	Funding Agencies	Both State Govt. & Central Govt.	Donations from abroad.
7.	No. of Male Staff	22	13
8.	No. of Female staff	8	6
9.	Affiliations of the organization	State Government	NGO
10.	Educational Qualification	IAS, Chairman-cum-CEO of OCAC	Computer & Telecomm Engineering (Director of IRMA)
11.	Do they have trained staff?	Yes	Yes
12.	Barriers	Problem in motivating people because of cultural barriers.	Financial constraints, cultural barriers, Maoist Problems.
13.	Type of Projects	e-Pragati, computerization of various Govt. departments, work in collaboration with various other departments, provide computer training, software development and also training in foreign languages.	Establishment of CIC's & Techno-cottages
14.	Future prospect	More projects for women	Women-centred projects, start some more CIC's and Techno-cottages.
15.	Expectations from the Government	More fundings, Foreign models of ICT development	Financial support, integration of government policies through the CIC's established
16.	Target	Reach more people	Reach more people

BHUBANESWAR N/6 AREA

After interaction with the staff members of OCAC and receiving required information from them, N-6 area of Bhubaneswar was chosen for interaction with women respondents. The N-6 area is located within 2 kms radius from the OCAC head office. A total of 70 respondents were chosen from 550 households by following the Simple Random Sampling Technique, where every 8th household was chosen for data collection. 2 case studies were also conducted. The responses of the women have been categorized under the following categories:-

Table No. 5.1b: Age of the urban women respondents of Bhubaneswar N-6 area.

Age group	**Frequency**	**Percent**
21-30	15	21.4
31-40	20	28.57
41-50	26	37.1
51 and above	9	12.9
Total	70	100

The above table clearly shows that more number of respondents, i.e., 26 out of 70 respondents are between the age-range of 41-50 and the 9 respondents are above the age of 51 years. There are 15 respondents between the age-group of 21-30 years and 20 between the age-group of 31-40 years. This varied category shows that the respondents are quiet diverse and their age will lead to diversity in response to various questions. People from different age-groups will have different opinions about the same issues as well.

Table No. 5. 2b: **Educational Qualification of the Respondent**

Educational Qual.	**Frequency**	**Percent**
High school	2	2.9
Intermediate	5	7.1
Graduation	26	37.1
Post-Graduation	32	45.7
Other(specify)	5	7.1
Total	70	100.0

The above table and bar-chart clearly show that majority of the respondents have done their post-graduation, followed next by graduation and a few (only 5 respondents) are technically qualified. Similarly, only 2 respondents have studied till high-school levels. Since, most of the respondents are quiet well-educated, it is an indicator in a way that they might be in a position to voice their opinions and will be having a sound judgment on matters concerning them.

Table No. 5.3b: Caste of the respondents

Caste	Frequency	Percent
ST	9	12.9
SC	2	2.9
OBC	5	7.1
General	54	77.1
Total	70	100.0

54 out of 70 respondents were from General caste 9 respondents were ST's, 2 were SC's and 5 respondents were OBC's. The institutions like OCAC do not discriminate on the grounds of caste, but the above table shows that less number of SC's, ST's and OBC's perhaps reside in the N-6 area of Bhubaneswar which is a flourishing area and quiet close to the OCAC head office. Secondly, for the purpose of data collection, every 8^{th} household was selected according to the simple Random Sampling Technique. So, may be the distinctions in caste should be a result of that as well.

Table No. 5.4b: **Religion of the respondents**

Religion	**Frequency**	**Percent**
Hindu	64	91.4
Muslim	3	4.3
Christian	3	4.3
Total	70	100.0

Since, Odisha is a predominantly Hindu State, hence majority of the population is Hindu which is clearly shown in the above table with 64 Hindu women respondents and 3 each from Muslim and Christian respondents.

PRESENT OCCUPATION OF THE RESPONDENTS

27 out of 70 respondents were Housewives. 5 respondents were Software Engineers, 18 were School Teachers and the remaining 20 respondents included Retired Central Government Employees, Private Job Owners, State Government Employees, etc.,

When the respondents were enquired about their parents' occupation, then, regarding their father's occupation, 10 respondents said that their father's were farmers, 30 were Government Servants and 30 Private Employees. Regarding their mother's occupation, 54 respondents said that their mother's were housewives, 6 said that their mother's were Government Employees and 10 said that their mother's were Private Employees.

Table No. 5.5b: Marital Status of the Respondents

Marital status	**Frequency**	**Percent**
Married	53	75.7
Unmarried	12	17.1
Widow	5	7.1
Total	70	100.0

The above table shows that 53 out of 70 respondents are married, 12 are unmarried and 5 are widows. The married women are basically engrossed with their family responsibilities and are not able to give priority or time for the use of ICTs as the women respondents who are unmarried.

HUSBAND'S QUALIFICATION AND OCCUPATION

When the respondents were asked about their husband's qualification, then 31 out of 70 respondents husband's were post-graduates, 18 were graduates, 4 were intermediate, and 17 were into others disciplines like diploma, computer courses, instructors in gyms etc., And regarding their husband's occupation, 35 respondents replied that their husbands are private

employees and 21 replied that their husband's are government employees and14 respondents replied that their husband's are self-employed like shop-owners, brokers, etc.,

Table No. 5.6b: Type of Family

Type of family	Frequency	Percent
Nuclear	48	68.6
Joint	22	31.4
Total	70	100.0

Majority of the respondents (48 out of 70) were from nuclear family and 22 belonged to joint family. The respondents were of the opinion that since Bhubaneswar is a costly place to live-in and it is difficult to survive with a large family. Some other respondents replied that the in-laws had to stay in the village because somebody had to stay back in the village and look after the landed property and house back in the village.

Table No. 5. 7b: Annual Income of the Family

	Amount	Frequency	Percent
	50,000-2 lakhs	6	8.6
	2-6 lakhs	31	44.3
	6-10 lakhs	27	38.6
	Total	64	91.4
Missing	99	6	8.6
Total		70	100.0

44.3% of the women's family income was between 2-6 lakhs per annum; 38.6% of the women's family income was in between 6-10 lakhs per annum, 8.6% between 50,000-2 lakhs per annum and 8.6% of the women respondents were not so sure about their family annual income. The family income cannot merely reveal the status of the women because it all depends on the size of the family as well.

When enquired about their savings, majority of the respondents referred to banks such as SBI, Puri Gramya bank, etc., followed by personal savings and other types of savings such as LIC, Post-office, NSC, and Mutual Funds etc. These savings are like assets which they can use during the time of need.

AVAILABILITY OF NEWSPAPERS, MAGAZINES, T.V. & RADIO

69 out of 70 respondents said that they subscribe newspapers at home; 35 respondents subscribe 2 newspapers daily; 32 subscribe 1 newspaper and 2 respondents subscribe for 3 newspapers daily. Only 1 respondent do not subscribe any newspaper.55 out of 70 respondents subscribe magazines but 15 respondents do not subscribe for any magazine. When enquired about television, 69 out of 70 respondents said that they have a television set at home which clearly indicates that television is one of the popular mediums of ICT along with newspaper.

40 respondents said that they have radio at home, especially F.M. radio in the cell phone. 30 respondents replied that they do not have radio and do not listen to F.M. When the respondents were enquired as to how these ICT mediums help them in their day-to-day household work; they replied that they came to learn about child rearing, health issues, cooking and beauty tips, information about the state, national, and international news, entertainment, and career related matters through the help of these mediums.

When enquired about their awareness on various women related programmes or columns coming in these mediums, many respondents spoke about editorials, health, and beauty tips in newspapers and magazines, culinary tips, etc., Programmes like 'Kalyani', 'Damini', 'Maa', 'Shrimati Kam Nuhanti', 'Ama Rosei', Ajira Nari' are the popular one's being telecasted on T.V. out of which almost all programmes are Odia Programmes or serials. Women also said that through the help of these mediums, they have become highly aware about issues on crimes against women, self-defense techniques, women empowerment stories, life histories of women political leaders, etc.,

They also said that they allow their children to watch T.V., read books and newspapers, and magazines related to their studies and even listen to songs in Radio. If the children are too small then they just watch cartoon programmes in T.V. Since, there are many quiz programmes, dance shows, song competitions, etc., are being telecast in the Television for children, it has become a very popular ICT medium. Moreover, the effect of a visual medium

is quiet high, effective and touching.Some of the most popular women magazines are 'Kadambini' and 'Women's Era'due to the wide variety of news on various health related issues, relationship issues, advertisements on a wide variety of products, stories and the like provided by these magazines.

TELEPHONE AVAILABILITY

All the 70 respondents revealed that they have telephone and use it frequently to call friends, relatives, family, children, office colleagues, etc., with the reduction in the price of mobile phones, many people are using it. Along with their affordable prices, they have become desirable as they are handy and easy to carry and for their effective services at affordable prices.

Many of the respondents use services like weather information, railway information, ambulance, police, and other help-lines. Skype and landlines are also used widely alongside mobile phones for the purpose of communication.

COMPUTER AWARENESS

57 out of 70 respondents replied that they know how to use computer and 13 said that they do not know how to use computers. Out of the 13 respondents who do not know how to operate computer, 7 respondents said that they are interested in learning computers if given a chance. 3 of the respondents did not show any interest in learning computers and the remaining 3 were unsure about their decision. Out of the 70 respondents, 63 respondents had computers at home and 7 did not have. 42 respondents had desktop and 28 respondents have laptop at their home. Majority of the respondents who know how to operate computers are trained in basics and a few of them are trained in programmings and internet, and web-page designing.

Many of the women respondents were of the view that learning basics was enough for them to manage things and hence learning technicalities is not so much required.65.7% of women said that every woman in village requires access to computer because they can learn by knowing how to use computers. It will help them in increasing their confidence level and helping them to access information from all over the world within no time.

Table No. 5.8b: Frequency of internet use by the urban women respondents

Do you use Internet	Frequency	Percent
Yes	47	67.1
No	11	15.7
Sometimes	12	17.1
Total	70	100.0

67.1% of the total respondents use Internet for their day-to-day activities or for the purpose of their official work. 48 respondents said that they have e-mail ID's and 22 respondents said that they do not have e-mail ID's. Since, 57 out of 70(as mentioned in the earlier point) respondents know how to use computers, it acts as an advantage for them in learning the use of internet as well, compared to those who do not know the use of computers. The other reason being that since Bhubaneswar is an urban area and is also the capital of Odisha, it provides more opportunities to the people in comparison to other rural or less developed areas.

VIEWS OF MALE RESPONDENTS

When the male members of the women respondents family were questioned whether they encourage women of their household to access newspapers, magazines, t.v., radio, and computers or not; majority replied that they encourage them to access newspapers and magazines but when it comes to telephones, TV. and radio, then the level of encouragement comes down and regarding the use of computers, it was quite neutral.

When the reason regarding this was asked, they replied that TV. and telephones, if used for a long time will be expensive and time consuming. They said that they want the women of the household to use everything but with limitations. But when it came to the question of taking responsibility of the household, while the women were away learning computers, all the respondents gave strangely the same answer that maybe they might look after the children or household chores. There was no surety of assurance in their voice. There was just a look of surprise in the face and a sense of panic in the voice of some of the male respondents.

Regarding the impact of telephone on their lives and the lives of women in their locality, almost all the respondents said that telephone is a device which has drastically changed their lives. It saves time and the labour of women.They does not feel lonely anymore because they can contact whoever they want whenever they want to. The concept of place and time is not a problem anymore. Hence, a sense of security to certain extent has crept in them, because, they feel safe to go outside keeping a cell phone with them, so that at any circumstance and at any situation, they can get the help of others.

Regarding the impact of computers and internet in their lives, they said that by using Computers they are able to store important things and use it whenever necessary. Internet is a vast pool of knowledge and they can get any information on any topic within seconds sitting at home, which has made their lives very convenient and hassle-free. Illiteracy is the main hindrance to computer-knowledge and hence most of the information present is in English, it becomes all the more difficult for those who are not so fluent and well-versed in English making the use of computers and internet very complicated for them.

The main problems with Internet use are virus problems, addiction to social networking sites, and computer games which consumes time, porn-websites and costliness of internet use. Newspapers, books, and magazines, on the other hand helps in improving our vocabulary and gives us vast array of knowledge. It makes us look at one particular matter from different perspectives. It carries us to a different World. But television and computers/internet have encroached into the area of books and magazines. This was the major complain which majority of the women respondents put forth even though they totally acknowledge the importance of these mediums as well. Hence, some sort of balance should be maintained between all of this.

The use of traditional radio has drastically reduced. Majority of the respondents use F.M. radio in their cell phones to listen to songs, news, etc., The popularity of Prasar Bharti on A.I.R. has been taken over by F.M. radio, t.v. and internet.

During the process of interaction with the respondents, there were some respondents who showed special interest in giving their opinions and sharing their experiences and stories related to the use and impact of the various ICT mediums in their lives. Their experiences required interaction at a deeper level in a very informal setup where they can open up in telling their stories and the problems which they faced in their day to day life and what kind of support they received from their family and friends. Hence, it was decided to carry out

atleast 4 case studies (2 rural women and 2 urban women) for carrying out the research at a deeper level and capturing narratives of women on the impact of ICT in their lives.

CASE STUDY-1

Mitali Das (name changed)[3], 33 years old, is a married lady staying with her husband and 2 children in a joint family of 9 members. She stays with her mother-in-law (housewife), father-in-law (retired teacher), brother-in-law (private company employee), sister-in-law (teacher), who also have a 4 year old son who goes to nursery school. Mitali's husband is a bank employee and their 6 year old son, goes to school and studies in Std-I and their youngest son is just 3 years old. Mitali, is a post-graduate with gold-medal in economics from Utkal University. She dreamt of becoming a civil servant after taking coaching from Delhi for civil services. She was always a very bright and talented student during her college days.

But due to family pressure, she had to forget her dreams and get married at her parents will. After marriage, she wanted to continue her studies but did not get any support or encouragement from her in-laws. Her husband is supportive but cannot say anything against his parents. He remains busy with his own work most of the time.

Mitali said that she was de-motivated from going out for a job but after her brother-in-law married a working lady as the in-laws started comparing both the daughter-in-laws and started making Mitali feel inferior because she does not have a job and is not able to contribute to the family expenditure when everything has become costly and expensive. Mitali's husband's income get's almost over because he has to support his parents and his children as well because he is the oldest son and hence, the majority of responsibility fell on him.

When Mitali was pregnant with her second child, she had gone to her parent's house for a few months till her delivery. During that period, she joined a computer training institute near her house without informing her in-laws and enrolled into a 6 month course where she learnt basics, internet, and web-page designing and some other programmings as well. Even though she was pregnant and during such a crucial time, her dedication to do something could not stop her from joining the course and successfully completing it.

[3] Name changed on Request.

Presently, she is working from home as a Data Analyst and getting a respectable salary. She is highly grateful to the fact that it was Computer and Internet knowledge that gave her self-respect and raised her self-esteem. But looking at the other way around, it can be said that it is the dedication and will-power of Mitali which led her to achieve something. The credit perhaps for this should only go to Mitali and no one else because, she had neither got any support from her parents when she wanted to go for Civil Services coaching as a student or from her in-laws who never encouraged her to go for a job.

But Mitali could balance her family and her job so well. She had neither neglected her children, her husband, her family responsibilities or her work. But the questions arising here are, if Mitali were to be a male child, then could her parents have got him married without a job? Why was a small wish of Mitali to study further and get a job discouraged by her in-laws? Why was Mitali scared to reveal her real name? Why did Mitali have to sacrifice her dreams and wishes and also to certain extent started coping up and accepting the fact that she is good for nothing? These questions keep pondering on the researchers mind and have left many more discussions following it. And in such a scenario, could we say that availability of computer training and job of a data analyst with their little demand in terms of physical movement, no inventory requirement and minimum monetary investment in any manner act as a substitute for all that Mitali had felt deprived of?

CASE STUDY-2

Geeta Mishra, 34 years old, private school teacher is married and lives with her husband and twin children who are 5 years old and study in Std-I of the same school where she is a teacher. Her husband is a software engineer. Geeta married at an early age just after completing her intermediate. She was not a very bright student as well, according to her. But it is her husband who encouraged and motivated her to complete her graduation and B.Ed. and also take computer courses which ultimately helped her to get a job and become independent.

Geeta gives all the credit to her husband for his dedication and encouragement. She said that she uses computers and internet to download materials for teaching in school and teaching her children at home. Newspapers and magazines have improved her English vocabularies drastically and improved her general knowledge. Television is a huge source of entertainment and knowledge as well. Today Geeta's self-confidence has risen to a great extent because of her knowledge of computers and internet. She is now economically

independent which gives her a huge sense of satisfaction and happiness. This was possible because she was supported and encouraged at every step by her husband and family members. Her hidden dreams were encouraged to bloom instead of being crushed down, as in case of Mitali (Case Study-1). Does accessing and mastering the use of ICT in itself make for women emancipation? Should we treat use of ICT as a medium for women emancipation or should we confine it as a medium towards emancipation but not a sufficient condition for the same. In other words, the questions arising here is that, is the women using ICT, a feminist? Or is she just a bi-product of feminist activities?

BADHINUAPALLI AND KANHEIPUR CIC's, KHALIKOTE BLOCK, GANJAM DISTRICT

After visiting the IRMA-India Office in Bhubaneswar and receiving information from the Director and other staff members of IRMA regarding the work which IRMA has done in the rural villages of Badhinuapalli and Kanheipur Gram Panchayats of Khalikote Block, Ganjam District, the researcher carried her research work further by going to the rural set up for further data colection. IRMA-India has established Community Information Centres (CIC's) in these two Gram Panchayats. It is the first of its kind in Odisha.

ROLE OF C.I.C'S IN THE VILLAGES

The C.I.C. consists of a 3-4 room office with a small reading room-cum-library, an audio-visual meeting room, 5-6 computers with Internet connection. They also have printers, scanners, web-cam, fax-machines, and agriculture-related equipments. It is staffed by 2/3 permanent staff and 6/7 temporary staff who are recruited from amongst the local youth.

The CIC functions as a Community Resource Centre, undertaking the following activities:-

- Imparting basic computer training for local school children and teachers as well.
- Displaying information related to current market rates of various commodities for villagers benefit, so that the villagers do not get cheated by the middle-men.
- Organizing consultation sessions between experts and villagers through video conferencing on farming, poultry, fisheries, etc.,
- Disseminating information on health and hygiene issues through awareness campaigns.

- Organizing awareness campaigns making the villagers aware regarding various programmes and policies meant for them.
- Organizing education fairs and Krishi melas.
- Collaborating with other SHG's and help in marketing of the goods produced by the village women like, bamboo baskets, honey, mushrooms, mats, leaf plates, etc.,

In order to know the response and views of the women of the villages and in order to know their use of ICT for their economic and social development, access to the villages was made through CIC at Badhinuapalli and Kanheipur. Snowball sampling was followed to access the women respondents representing the number of villages, because Badhinuapalli CIC consists of 3 Gram Panchayats:-

a) Badhinuapalli Gram Panchayat – 10 villages
b) Bikrampur Gram Panchayat – 8 villages
c) Tulasipur Gram Panchayat – 4 villages

Similarly, Kanheipur CIC consists of 2 Gram Panchayats:-

a) Kanheipur Gram Panchayat - 9 villages
b) Kairasi Gram Panchayat - 1 village

100 women respondents were chosen and interviewed and 2 case studies were undertaken. 53 respondents were from Badhinuapalli CIC and 47 respondents were from Kanheipur CIC.

The major arguments and response of the women have been categorized under the following categories:

Table No. 5.1c: Age-wise classification of the rural women respondents

Age	**Frequency**	**Percent**
21-30	34	34.0
31-40	45	45.0
41-50	18	18.0
51 and above	3	3.0
Total	100	100.0

The above table shows that 45% of the respondents are between the age-group of 31-40 years of age, 34% are between the age-group of 21-30, 18% are between the age-group of 41-50

years of age and only 3% are between the age-group of 51 and above. Majority of the respondents are between the age-group of 21-40.

Table No. 5.2c: Educational Qualification of the rural women respondents

Educational Qualification	Frequency	Percent
Illiterate	2	2.0
Primary school	10	10.0
High school	31	31.0
Intermediate	19	19.0
Graduation	32	32.0
Post-Graduation	6	6.0
Total	100	100.0

Out of the total of 100 respondents, 32 have completed their graduation, 19 have completed their intermediate, 31 have studied up to the high school level and 10 have studied upto primary school level. Only 6 of the respondents are post-graduates and 2 are illiterate. The educational qualification table shows that not many women have gone for higher studies, and no one has opted for technical education. This clearly highlights the educational backwardness of women respondents in these rural villages.

Table No. 5.3c: Caste-wise classification of the rural women respondents

Caste	Frequency	Percent
ST	14	14.0
SC	20	20.0
OBC	26	26.0
General	40	40.0
Total	100	100.0

40 out of 100 respondents belonged to the General Category. 26 respondents were OBC's, 20 respondents were SC's, and 14 respondents belonged to the ST Category. The General

Caste population is quite high in these villages. But if the Backward Caste population is put together, then their number is also equally good.

Table No. 5.4c: Religion-wise classification of the rural women respondents

Religion	Frequency	Percent
Hindu	90	90.0
Muslim	1	1.0
Christian	9	9.0
Total	100	100.0

The villages are mostly Hindu dominated villages which is clearly visible in the above diagram. 90 out of 100 respondents were Hindus. There were 9 Christians and only one respondent was a Muslim. Muslims and Christians are a minority, in not only India but also in Odisha as well.

PRESENT OCCUPATION OF THE RESPONDENTS

27 out of 100 respondents were housewives. 30 respondents are associated with various Self Help Groups, 10 were students and the remaining respondents included mushroom cultivations, aanganwadi teachers, primary school teachers, cooks, domestic helps, etc.,

When the respondents were enquired about their parents occupation, then 55 of the respondents father's were farmers, 10 were government servants, 31 were private employees and 4 were wage labourers. Regarding their mother's occupation, 70 respondents mother's were housewives, 13 were private employees and 17 were self-employed, like making bamboo baskets, producing honey, farming, selling vegetables, fishes, etc.,

Table No. 5.5c: Marital Status of the rural women respondents

Marital status	Frequency	Percent
Married	80	80.0
Unmarried	20	20.0
Total	100	100.0

80 out of 100 respondents were married and 20 were unmarried. There were no widow's or divorcees amongst the respondents interviewed. Married women are more busy with the household work than unmarried women, hence taking out time for learning computers or visiting CICs is little difficult for them unlike unmarried women.

HUSBANDS QUALIFICATION AND OCCUPATION

When the respondents were asked about their husband's qualification, then 28 out of 100 respondents husbands were only educated upto high school, 14 were intermediate, 20 were graduates, 10 post-graduates, 8 were educated till primary school level and 20 were into other categories like diploma, computer course, B.Tech., M,Phil., etc., And regarding their husband's occupation, 54 respondents replied that their husband's are private employees, 16 women respondent's husbands were farmers, 7 were government servants, 3 were wage labourers and 20 were self-employed like businessman, SHG workers, shop-keepers, lecturers, etc.

Table No. 5.6c: Family-wise classification of the rural women respondents

Type of family	Frequency	Percent
Nuclear	63	63.0
Joint	37	37.0
Total	100	100.0

63 respondents had nuclear family and 37 respondents belonged to joint family. Managing large families with small income is extremely difficult. Many respondents replied that due to property issues, division of land, etc., their families has got divided and now they stay separately.62 respondents had small family size with 1-5 members, 35 respondents had big family size with 6-10 members and 3 respondents had large families with 11 or more members. The size of the family also impacts the economic condition.

Table No. 5.7c: Annual Income of the Family of the rural women respondents

	Amount of Income	**Frequency**	**Percent**
	50,000-2 lakhs	68	68.0
	2-6 lakhs	28	28.0
	6-10 lakhs	3	3.0
	Total	99	99.0
Missing	99	1	1.0
Total		100	100.0

68 out of 100 respondents family annual income was between 50,000-2 lakhs per annum; 28 respondents family annual income was between 2-6 lakhs per annum. Only 3 respondents family annual income was between 6-10 lakhs per annum and one respondent was not sure of her family annual income. But the size of the family will definitely put an impact on the total income earned as well. Because, the larger the family, the less is the standard of living with a small income and vice-versa.

When the respondents were enquired about their savings, then majority of the respondents said that they have savings in post-office followed by personal savings in the form of LIC and at home and also in bank, which they use during their needs. Some of the respondents also referred to Savings in the form of landed property like Land, House, etc., and non-landed property like Gold and Silver jewelleries, cash and also rice. Paddy is regarded as an auspicious item and a sign of wealth and prosperity.

AVAILABILITY IF NEWSPAPERS, MAGAZINES, T.V. & RADIO

57 out of 100 respondents said that they subscribe newspapers at home, out of which 43 respondents subscribe 1 newspaper daily and 14 respondents subscribe 2 newspaper daily 43 respondents do not subscribe for any newspaper. They find it costly to invest on newspapers and hence avail the facility of reading newspapers in the C.I.C Library.

Only 23 out of 100 respondents subscribe for magazines. These 23 respondents subscribe only 1 magazine. The remaining respondents said that they sometimes read magazines in the C.I.C library on in their work places if available.

When the respondents were asked whether they have Television at home, then 50 out of 100 respondents said that they have Television and the remaining 50 said that they do not have T.V at home but 40 out of this 50 respondents who do not have T.V. said that they watch T.V serials in the C.I.C office. They are fond of mythological serials, Odia serials and odia songs in particular.

77 respondents said that they have radio at home, specially referring to F.M radio and the remaining 23 respondents said that they do not have radio.

When the respondents were enquired as to how these ICT mediums help them in their day-to-day household work; they replied that they come to learn about what is going on all around the world by reading newspapers and watching news in T.V. The programme 'Kalyani' is a favourite amongst majority of the respondents. Most of the respondents particularly look for agriculture and health related programmes in the T.V. F.M radio is basically used for listening to songs and news in regional language, etc. The respondents are of the opinion that it is very convenient to work and also listen to radio side by side.

When the respondents were questioned regarding their awareness on various women related programmes or columns being printed or telecasted in these mediums, they basically referred to news about role of women in politics, Odia serials, Odia movies, magazines like 'Kadambini', 'Saptahik', 'Gruhini', T.V serials like 'Shrimati Kum Nohanti', 'Kalyani', 'Damini', 'Balika Vadhu', 'Krushi duniya', news and other information related to health, agriculture, etc., being aired in the radio. Most of the programmes are in Odia language.

They avail these ICT mediums in their houses and those who do not avail them at home, they go to the CIC's and make use of these ICT mediums. The CIC's have helped them in not only making them acquainted with these mediums but also making them aware of various issues and thereby making them a part of the development process.

They also said that they encourage and allow their children to read newspapers, magazines etc. and watch T.V as well but not too much. Majority of the women respondents said that they want their children to learn everything which they could not, so that their children do not have any kind of inferiority complex when they grow up and go to the town on other places for higher studies.

The women regret that there is not much scope in their villages for higher studies but the CIC's are playing a positive role in guiding the students regarding better career opportunities by conducting career counseling sessions as well

Table No. 5.8c: Availability of telephone in the rural women's household

Have Telephone	Frequency	Percent
No	40	40.0
Yes	60	60.0
Total	100	100.0

60% of the respondents said that they have telephone at home and 40% revealed that they do not have telephone at home. Out of the 60 respondents who have telephone at home, 41 respondents have mobile phones and 19 have both mobile and landline. According to them, mobile phones are cheap and handy and they can contact people whenever necessary or required. Majority of the respondents use services like weather information, local health centre, police, etc. Landline is used by a few people and so is Skype.

COMPUTER AWARENESS

When the respondents were asked about their knowledge about computers, then only 22 respondents said that they know now to access computers and the remaining 78 respondents said that they do not know how to access computers. The 22 respondents who knew the use of computers said that they had learnt from their colleges. A few of them took computer courses and some of them said that they had learnt from the CIC office. Out of the 78 respondents who do not know, how to use computers, 33 respondents said that they are presently undergoing training in the CIC office and trying to learn computers.

The CIC's teach them basics and also how to use internet in order to get information on various issues of importance. The women respondents who are currently undergoing computer training in the CIC's said that they got motivated to learn computers after attending the awareness campaigns conducted by the CIC staff in their village. They also got motivated after seeing other women from their village going to the CIC and learning how to use

computers. They were surprised of the fact that sitting at one place, they can gather information on numerous topics, especially of their use in just a few minutes.

INTERNET USAGE

48 respondents viewed that they were not sure about their internet use. 40 respondents said that they have not used internet as of now 5 respondents viewed that they use internet 1-2 times a week, 4 respondents viewed that they use internet 2-4 times a week, 2 respondents viewed that they use internet everyday and 1 respondent viewed that she used internet 4-6 times a week. This shows that the frequency of internet use amongst the respondents is quite low. This could be because many respondents do not have computers at home and even if they do have, then they do not have internet connections. Many of the respondents do not have the necessary qualifications or knowledge or training regarding the use of computers and internet. Only 19 respondents have an e-mail id and the remaining 81 respondents do not have an e-mail id as well.

VIEWS OF MALE RESPONDENTS

When the male members were questioned whether they encourage the women of their household to access newspapers, magazines, telephones, t.v, radio, computers, etc., or not, then majority replied that they encourage them but the women should not neglect their responsibilities towards the family and should not neglect their household work. Since, most of the respondents are not so well-to-do, they think that spending too much money and time on these mediums is not worth it as it consumes time and money. The women have to look after the children, other family members, complete household chores, go to the job (if any), then there is hardly any time left for her to indulge in such activities. "She can avail the facilities in the CIC's if she wants, but not for a very long time".[4] The questions arising here are, why does a man have to always decide what the priorities are for a woman? Why does the man always have the final say on almost every matter? Also, what exactly constitute support and encouragement of spouse and family members for women to move out of house to indulge in ict related activities? Does it involve giving permission to spare time and step out or does it involve, presenting the case in favour of the women in front of the family and community member or does it also involve adapting to changes in role expectations as women take a step out.

[4] . Viewed by one of the respondent's husband.

The women respondents were very appreciative of the work that IRMA-India was doing by the establishment of these CIC's. The women respondents wanted more CIC's of such kind to be established. The CIC's provided newspapers, magazines and other books present in their library to be read by the villagers, thereby giving them an opportunity to access materials free of cost. The computer training sessions were particularly helpful for the people of the villages who had earlier never even dreamt that they have the capacity to access computers. Many villagers even revealed that they had never seen a computer before. But the only challenge they faced was that all the information stored is in english, so they need a translator for help at all times.

The display boards maintained by the CIC staff have helped the villagers drastically from getting cheated by the middle-men and by providing information on the market prices of various commodities and weather information as well.

The women respondents were very happy that they can go and watch T.V. in the CIC office whenever they are free from their household work. They get a chance to meet their friends and discuss and chit-chat with them regarding various topics of their internet. The CIC office is a place of social interaction for these women. Serials and programmes in local languages are mostly viewed and watched.

The CIC is planning to establish "Community Radio" in the villages. But the traditional culture which widely prevails in the villages sometimes acts as a hindrance in the mobility of women. The geographical location of the CIC office also sometimes acts hindrance for the women to visit the CIC's on a regular basis. Hence, more number of CIC's is required to be established.

In order to further look at the impact of ICT on the socio- economic condition of women, below are two case studies highlighting various aspects of a woman's life and how certain ICT mediums have helped them to attain what they wanted in life.

CASE STUDY -1

Pragati Shethi, 36 years old, is a married lady residing with her husband, two children who go the primary school nearby in Kanheipur village along with her mother-in-law, father-in-law and two brother-in-laws. She lives in Kanheipur village in a joint family of 8 members. Her husband is a shop-keeper and her father-in-law is a farmer. Her mother-in-law is a housewife and here two brother-in-laws are currently unemployed and they have been looking for job.

Pragati is over-burdened with work, as she has to help her mother-in-law in completing the household chores, looking after 3 cattles that they have, looking after the children who are in std-IV and std –II respectively studying in the nearby primary school and even sitting in her husband's shop when he has to go out for buying groceries. Pragati's husband always goes to the market to purchase the groceries because he believes that he gets the groceries at a well-bargained price which Pragati will not be able to manage. The responsibility of the children and other family members is the duty of a woman and hence going to the market amongst other men who are strangers is not easy for a woman and also not the domain of a woman.

Pragati has completed her intermediate and wanted to study further but her parents wanted her to get married as their economic condition was not good and they could not have afforded to send her for higher studies. After marriage, pragati's in-laws were also not so well-to-do and since she was the only daughter-in-law of the house, the work pressure fell on her and soon she lost track of her wishes and ambitions and tried her best to become an ideal wife, mother and daughter-in-law. According to Pragati, after marriage, a woman's responsibilities increases. Odisha is a traditional society and people are highly religious and traditional and hence being a Odia girl and after marriage it is her duty to be an ideal Odia daughter-in-law. The concept of an ideal Odia wife comes from the Lakshmi Purana which was written by the Odia poet Balaram Das in the 15th century. Lakshmi Purana is chanted in the month of Margashira, which is the supreme month of the year and the first Thursday of this month is especially regarded as extremely auspicious. There are various rituals which the Odia women must strictly adhere to, according to the Lakshmi Purana inorder to appease Goddess Lakshmi. A woman is expected to obey her in-laws, clean the house, not beat the children, prepare sweets and decorate the house before the puja, and the like.[5] Women as an ideal daughter, mother, wife, daughter-in-law, and the like are portrayed in the media as well in the form of movies and television serials. These movies and serials also put a great impact on the minds of individuals, both men and women, which in return leads to an increase in expectations from the women. The same happened in case of Pragati as well.

A couple of years back in 2011, Pragati started visiting the CIC Office out of curiosity after attending some of its awareness campaigns and then joined a Self Help Group which works in collaboration with the CIC. She would finish all her household chores, send her children to school, see off her husband to the shop and during the afternoon, she started going to the

[5] Available online on:[www.oriyanari.com/sitebuildercontent/…./lakshmi_purana.doc][Accessed on 12th February,2013].

SHG where she learnt to process honey. She learnt to lure away the honey-bees, purify the honey and then package it, ready to be sold in the market. This part time occupation of her's started fetching her some money. But this small amount of Rs. 200/- per month was not sufficient because her husband's hopes got burnt in a fire one night and they lost everything in it. The shop which was their major source of income was burnt to ashes and they started having serious financial crisis.

The loss of the shop, followed by the financial problems led to tension and quarrels in the family. This added to Pragati's misery and she decided to do something about it. So, after interacting with the CIC staff, she with immense difficulties motivated here husband to meet the CIC staff members and take their suggestions. After persuading her husband for few days, her husband finally agreed to go and meet the CIC Staff members and there in the CIC Office, with the help of video's they were shown about mushroom cultivation and through video conferencing, they were made to interact with specialists who would guide them from time to time as and when required.

Both Pragati and her husband put advises of the CIC staff members and experts into practice without further delay. They were offered all possible help by the CIC. Whenever they required help from experts, they would contact the experts by the help of the CIC members through video-conferencing. Both Pragati and her husband are doing well in the mushroom cultivation as Pragati's honey making work with the SHG is in good shape.

Pragati is now learning computers and the use of internet in the CIC Office. It is because of Pragati, that her husband went into the mushroom cultivation business and they are earning much better than they used to. It can be truly acknowledged that, not only women use ICT directly for their emancipation, but also in an in-direct way by encouraging their family members- children/ men etc. They try to explore opportunities for better living in terms of economic activties and social awareness. It could be said that Pragati almost thought ICT too convenient a forum for her husband as much or might be more than hers, reflecting the obvious freedom of men in accessing these than it has ever been for women.

CASE STUDY -2

The second case study is about Pragnya Barik, 29 years old, staying with her husband and two children in a joint family of 8 members. Her family also includes her father-in-law, mother-in-law and 3 unmarried sister-in-laws. Her elder son who is 5years old, studies in Std-

V in Badhinupalli Sikhshya Kendra and her younger son is 3 years old. Here husband is an employee in a cooperative society. Pragnya is a graduate who wanted to study further and become a bank employee. But her parents got her married at an early age because a girl staying unmarried for a longer time is a taboo in their society. Her parents thought that the only work of a girl is to get married and manage her family. They never gave much importance to Pragnya's dreams and aspirations and hence got her married eventually at an early age when she was just 18 years old.

Pragnya always wanted to study more and become economically independent. But in her in-laws place, she became increasingly busy with the usual household chores and day-to-day family life. 3 years back, she started visiting the CIC Office in Badhinuapalli whenever she got time. She started learning computers there and since she was a graduate, it was not difficult for her to grasp the basics of computer skills quite easily. After learning the basics in the CIC free of cost, she wanted to go for some professional courses. But she did not know how to approach her in-laws and husband and take permission from them. She somehow convinced her husband but her in-laws were reluctant.

Even though she had to go just for a few hours to the computer institute in Khalikote for training, her in-laws were very reluctant. Even though she stayed in a joint family and there were other members to look after her younger son only for a few hours, everyone in the family, especially her mother-in-law was quite reluctant. She took out all her savings which she had safely hidden inside the grocery boxes and under the mattress of the bed and went and enrolled for the PGDCA course. After successfully completing the course, Pragnya is now working as a data enterer in private office in Khalikote. She earns an amount of Rs. 3500/- per month which for her is a good amount of money to deal with here expenditures. She feels confident and her self respect has risen to a great deal.

She had to struggle while she was going for the computer training classes, as she had to look after her family, children, household chores, etc., Her in-laws probably never thought that she is capable of working and also earning. Her economic independence has changed the attitude of her in-laws completely towards her. They see her with respect now. They had never thought that a woman has the ability to learn computers and go to office and work side-by-side with men. But Pragnya's dedication and hard-work completely changed their views. Pragnya has also succeeded in motivating her sister-in-laws to visit CIC and learn computers and learn the use of internet and also read books, magazines and newspapers on regular basis.

Here mother-in-law has started visiting the CIC to watch Odia serials in the t.v. Many other women have been inspired by Pragnya and her dedication.

The question we have is why ICT is considered to be a masculine space? Why women remain distanced from ICT when it seems to be the easiest of all provisions available to them to exploit, to gain knowledge and enhance their skills and become more competent for participation in public life. Women have to make huge sacrifices in order to get something they desire, as suggested from the case studies. The problem of finance has always been one of the significant problems with majority of the respondents which restricts their use and interaction with the various ICT mediums. So, women's involvement in finance is also equally very important for them to increase their interaction with ICT. With these questions we may proceed to the concluding chapter which will give a clarification on the situations prevailing in Odisha in both the rural areas as well as the urban areas. It will discuss in detail the findings of the study and try to provide some suggestions regarding the ways to be looked at which will help in bridging the digital divide. The forthcoming chapter leads towards the study findings and suggestions and focus on the issues that need a critical look.

CHAPTER- VI

CONCLUDING REFLECTIONS

Information and Communication Technology (ICT) is one of the major contributors in the transformation of social, economic and political life throughout the world. The developing countries like India should embrace information technology to avoid further economic and social marginalization as well as to offer opportunities for expansion and diversification of economy. But there exists an irregular distribution of these technologies which is called as 'digital divide'. This divide creates a division between the people or group who do not have access to information.

Women in the developing countries are in the core of this divide. Women not only share with men, the poverty aspect but further get excluded by not being given equal access to the knowledge based field of information and communication technology. Lack of access to the information and communication technology becomes a significant factor in the further marginalization of women from the economic, social and political mainstream of their countries and of the world. Since, women are one of the marginalized groups and face exclusion because of their gender, hence a study on the women aspects of ICT is very important to understand the different strategies in which ICT can empower women in both rural and urban areas.

ICT is an impartial medium. It is a network for the flow of information and knowledge. This knowledge network needs to be women friendly. ICT is instrumental in helping women break-free from the stereotypical structures and narrow outlooks of society and from the hegemony of male dominated structure.

It is important to create a space for women in this male dominated sphere of ICT which has been thought as a masculine space. ICT, which has the prospective to digitally link each and every woman in the world, opens-up huge area of possibilities for exchange of information. It opens up avenues for women to overcome the constraints of seclusion, mobilize resources, support each other, reach out to new markets and open-up inroads for lifelong learning experiences.

The importance of ICT has been realized and mentioned in the Millennium Development Goal No.8 (MDG 8), which emphasized the benefits of new technology, especially ICT in the

fight against poverty. In India the path towards technology induced development, especially associated with ICT, was given a leap in 1984 by the Congress Government under Rajiv Gandhi. He assumed power and adopted information of Indian society as an effective route to development with massive program of computerization launched in the public sectors as well as in commercial undertakings, and administrative departments (Bajwa , 2012). The National Telecom Policy of 2012 of India also talks about maximizing public good by making the service available across the entire country. Due to the appearance of ICT on the national agenda and announcement of ICT policies by several state governments has strengthened the position of India in the ICT sector in the world.

But inspite of the various Governmental policies and efforts by the Non-Governmental Organizations, there still exists a digital-divide, between men and women, between rich and poor, between urban and rural, etc as revealed in the previous chapter. Hence, empowerment of women is very essential. ICT supports and helps in the process of women empowerment, as it is based on the method of knowledge sharing and provides a forum for women to come together, discuss matters related to them and reach consent on certain issues of importance to them. In this way ICT helps in connecting women to the external world. ICT not only helps in extracting information from the outside world but making women reach the source of information as well.

In order to carry out present study, two organizations has been selected. They are: IRMA-India (NGO) and OCAC (State Government). The main aim of IRMA-India is the promotion, dissemination technology as a means of helping rural communities achieve sustainable socio-economic development. It works for rural people using the medium of ICT by establishing Community Information Centers and Techno-cottages. OCAC, on the other hand is formed as a part of Odisha State ICT Policy, 2004. It is designated as the Directorate of the Information Technology Department to coordinate and implement the ICT policy and power the growth of IT in government and semi-government sectors. It provides web-based solutions for online tracking and subsequent monitoring of functioning of all the 41697 Anganwadi centers in State of Odisha. It has also developed and implemented functionalities such as web browser, data uploading, reporting, etc. for 26 schemes of W&CD in Koraput district[1].

[1] Available online on: [http://www.ocac.in/ViewDetails.aspx?glinkid=GL001&plinkid=PL019&slinkid=SL000][Accessed on 29th August, 2011].

The literature review basically focuses on the role and impact of the ICT on women. It highlights on various studies supporting the inclusive role played by ICT. But it is equally important to highlight on the capability of the women in handling these technologies or the possibilities and avenues that can be opened up for making the lives of these women sustainable. There is a limited literature which talks of the ways through which ICT's can help in changing the stereotype roles that prevails in our society which sees women as a weaker gender and hence incompetent to step into a man's world and the whole concept of ICT as a masculine space.

The objectives of the study are : (i) to study and analyze the concept of ICT, its origin, objectives and roles, (ii) to critically analyze and review the policy issues of Information and Communication Technology in bridging the digital divide and empowering rural and urban women, (iii) to study and understand the use of ICT's by rural and urban women, (iv) to study the impact of ICT's on the socio-economic upliftment of women in supporting their livelihood needs thereby giving them voices in the society, (v) to find out the extent to which ICT's space is engendered.

The basic nature of ICT is women-friendly, since it is an impartial medium. It has the potential to overcome the hurdles of structural and social space leading to various restrictions on women. We do not need to wait for a big revolution to happen for the change to take place. But the whole paradox is that ICT itself is perceived as a masculine space. Hence, the present study looks at the inner world of women, as to when women access ICT ; directly or indirectly and what kind of changes in life happen in terms of possibilities, aspiration, socializing, prospects, etc. This study also gains importance because it tries to understand the difference in response and access to ICT in rural and urban areas. This could be explained or understood by understanding the differential provisioning, i.e., the difference in access and opportunities in both these areas are different and by understanding the forms of patriarchy in both the regions. Because patriarchy exists in both the regions, but in different forms. In rural areas, it is apparent and traditional, whereas in urban areas, the form of patriarchy has a different notion. The present study shows in the urban areas, patriarchy takes new modes and avenues for women empowerment. On one hand, urban areas have the opportunities to provide women with various facilities which would help in empowering them. But on the other hand, these opportunities are male-centric or male-driven which acts as a barrier in the full participation of women or in the path of their freedom in decision-making.

Census of India (2011), says that, Odisha is a poorest state of India having 48% of its 40 million people living below poverty line. 85 % of its population lives in rural areas spread over 60,000 villages. The population of the marginalized and unprivileged communities like tribals (ST's) and dalits (SC's) forms 38% of total population of the state. About 60% of the villages are not yet connected with proper roads. Agriculture is the mainstay of the economy. Lack of access to information, basic social and economical services, facilities and goods are the major contributing factor to the backwardness and poverty amongst the people, especially the rural people. Hence, it becomes important to study as to what went wrong and why have the development models of ICT have not been able to perform so well as in other states.

OBSERVATIONS FROM THE STUDY

(1) On Computer Information Centers (CIC's) : (1) the CIC's are a 3-4 rooms office with a small reading room-cum-library, an audio-visual meeting room, 5-6 computers with internet connection, printers, scanners, web-cams, fax-machines, agriculture related equipments, etc..

(2) The CIC's have 2/3 permanent staff, but they choose some temporary staff from amongst the local youth who are fluent in local dialect and friendly with the local people. Hence, they can motivate people to come and attend the awareness campaigns.

(3) Since, agriculture is the basis of the economy of people there; the CIC's basically indulge in providing agriculture related solutions to people. This includes: how to increase production of rice, mushrooms, other local fruits and vegetables. They inform people as to which pesticides should be used in what field of crops or vegetables and in how much quantity.

(4) They help the villagers by providing them with free consultations with experts through video-conferencing. The villagers take the advice of the experts on matters related to agriculture, fisheries-technique to increase fish farming, on goat farming which is also a successful business there.

(5) The CIC's have display boards where they update information regarding weather and market prices of various goods and commodities , vegetables , fruits , meat and fish , weather information , useful help-line numbers in local language. This has tremendously helped the villagers in not being cheated by middle-men.

(6) The CIC's have conducted around 53awareness campaigns on various issues regarding the awareness on CIC's, health and hygiene issues, regarding agriculture , education and numerous other issues.

(7) They have been successful in motivating local/primary school students, teachers and villagers to come to the CIC's and learn to operate computers and use internet. Separate training timings have been fixed for the students, teachers and the villagers. Hence, many of the students are able to check train timings, exam results, and book tickets and get other updated information about the state, country and the world.

(8) The CIC's collaborate with various Self-Help-Groups and help in providing employment to the village women like producing honey, making bamboo baskets , leaf plates , mats etc. and marketing the goods produced by them, thereby helping them in empowering the women through employment. Economic independence is a significant contribution in the empowerment of women.

(9) The CIC's maintain registers related to the queries being asked by the people, number of people visiting the CIC's, information regarding the awareness campaigns, etc..

(10) They run on international funding or donations and their work is reviewed by delegates coming from abroad.

(11) A CIC's Development Committee has been formed for each CIC's to look after the CIC's sustainability as well as coverage of other Government Programs by taking the Sarpanch (local government elected representative), school teacher, local leader and learned people of the program areas. The committee meets frequently and also helps during the CIC's awareness campaigns which are being organized in villages.

(12) Villagers come to the CIC, not only to learn computers but also read books, magazines, newspapers and watch T.V. The rural villagers mostly prefer watching serials in Odia and reading books or magazine or newspapers in Odia.

(13) The number of male staffs are more in IRMA-India than female staff. This sometimes acts as a hindrance for many women to come and talk freely with the CIC's managers which are mostly men. Women feel more comfortable in sharing their feelings with female staff.

OBSERVATIONS ON OCAC

(1) This is a state Government run organization which was a part of ICT Policy of Odisha, 2004. It runs on both State and Central Government funding.

(2) The number of female staff in OCAC is less than the number of male staff.

(3) It works for the computerization of various government departments.

(4) It helps in providing various technical courses in computer courses in computer education.

(5) It also gives training in foreign language.

STUDY FINDINGS

(1) The study finds out that urban women (N-6 of Bhubaneswar) have easy access to ICT mediums and more familiar in making use of it.

(2) T.V. and mobile phones are the most common ICT mediums being used in rural areas according to the present research.

(3) In the urban areas, apart from T.V. and mobile phones; newspapers, magazines and computers are also used.

(4) The use of A.I.R. or Prasar Bharati has reduced drastically in both rural as well as urban areas. Most people use F.M. radio instead of All India Radio.

(5) Women in nuclear families tend to have more freedom in terms of making use of their time and resources.

(6) The rural people, especially women have tremendous skills and potentials; provided that they are supported and allowed to demonstrate their skills.

(7) Many housewives, from the urban areas expressed regret of losing out on the scope to build their careers given their qualifications because of other priorities and lack of support.

(8) There is a need to appoint more female staff to which in the field, so that the women can be more open in expressing their views and feelings.

(9) In some ways, ICT has helped many women to skirt various social restrictions and reach out to information resources, opportunities and networks there by enabling them to pursue internet and aspirations.

(10) The CIC's has become an integral part of the village .Beside being involved in various aspects of the village – public and economic; they also have acquired a sense of belongingness, ownership among the villagers by employing the local youths.

(11) With time, the CIC's are not only a place for getting information but also a social space available to the villagers to meet and socialize and discuss their everyday issues.

(12) The participation and attendance of women in the awareness campaigns being organized by both OCAC and IRMA is regular but limited. The reasons broadly being-shy nature, dominant male voice, work pressure, social restrictions etc..

(13) Women take more interest in daily soaps, mythological serials, agricultural and health related programs and news mostly in local languages.

(14) Many respondents mentioned especially of being benefitted from health related advertisement on T.V.

(15) Women viewed ICT as an alien and masculine space not meant for them. However, through the inclusive measures taken up by these organizations (OCAC and IRMA), they are opening up to acquaint themselves with ICT's concerning such activities as deemed suitable under the set paradigms of patriarchy.

(16) Many women respondents did not identify themselves as active user of ICT's and its prospects. Because, they did not view ICTs as in sync with their traditional roles like housekeeping, innumerable religious rituals etc. This role set is reinforced in them through various expectations and models of ideal conduct prevalent among them.

(17) The research finds out that IRMA and OCAC do not discriminate anyone on the basis of caste, but the majority respondents belonged to the general caste, both in rural as well as urban areas.

(18) It was also noticed that the lower caste people usually sits at a distance from the higher caste people while attending any gathering or awareness campaigns. The notion of purity and pollution is deeply engrained in the Indian society. Gupta (2005), says that India is one of the most stratified societies in the world. There are not only income disparities but also disparities on the basis of religions, caste, communities, etc. Kapur et al (2010), in their study on the Dalits in Uttar Pradesh are of the view that social obligation sometimes acts as a condition responsible for the presence of a Dalit in social gatherings inspite of the humiliation faced by them. This holds true to a certain extent because the Dalits of Badhinuapalli and Kanheipur Gram Panchayat come to the awareness campaigns at the motivation and encouragement of the CIC

staff members but deep inside they have a feeling of purity and pollution which holds them from sharing the same space alongside the non-dalits.

(19) The women also sit separately from men while attending any gathering or awareness campaigns.

(20) The Odisha State ICT Policy, 2004 as well as the New Telecom Policy,2012 are more technical and do not have any separate clause which would ensure full participation of people in both rural as well as urban areas, especially women.

(21) Women who have become economically independent by the joint ventures of the CIC's with the SHG's have become confident and have also admitted that there has been a rise in their self-respect.

(22) Badhinuapalli and Kanheipur CIC's are the first CIC's to be established in rural areas in Odisha. It is the first of its kind.

(23) Geographical location of the CIC's was also one of the reasons why the participation of women was quite less in the awareness campaigns. The CIC's were located in Badhinuapalli and Kanheipur and they cover 12 villages and 10 villages respectively. So, women from other villages were not frequent in visiting the CIC's office. Their mobility was restricted because of their dependence on the family members going from one place to another, bad roads especially during rainy season, wok pressure, etc.

According to Kabeer (2006), the discriminated groups are more likely to fall under the clutches of poverty and suggested that gender constitutes a specific form of clear-cut disadvantage in conditions of poverty. It holds true in case of women in Odisha, especially rural women. Women who already fall under the excluded category have a higher chance to slide into poverty and deprivation because they belong to rural areas where access to modern infrastructure and better facilities are not at easy reach to these women. The standard of living of women from Kanheipur and Badhinuapalli Gram Panchayats are not so good in comparison to women from Bhubaneswar N/6 area. The standard of living impacts their way of thinking and understanding things. Because of their traditional settings and background with an additional disadvantage of patriarchy, they have remained aloof in a closed entity, very reluctant to open up or accept new ideas, new technologies, etc. The researcher faced problems in gaining entry to the society because of their shy nature and aloof attitude. In such a scenario, the question that ponders in the researcher's mind is that, whether ICT is only a masculine domain? Why do women remain distanced from ICT when it seems to be the easiest of all provisions available for them to enjoy various life chances,

to gain knowledge and enhance their skills and become more competent for participation in public life.

ICT faces both provisional and cultural setback in India especially in rural areas. Besides suffering from deficiency of infrastructure, inventory, high end technology, finance, trained personnel, it also suffers from a weak policy backing. ICT projects in rural areas are mostly designed towards overall community(CICs) development. However, their approaches remain eclectic in identifying and addressing socio-economic issues separately and intensively to the end of elevation. The promotion of ICTs remains mostly in the areas of livelihood skills, health and hygiene and education and hence there is a need for more women-centric and women- friendly approaches. The use of ICTs by women is not yet common to public perception, especially in rural areas. Competition among private players and the presence of head quarters of the state agencies make availability of ICTs much more abundant in urban area. In an urban area, the idea of women using public space is more acceptable and on an average, women are more exposed to ICTs and its different uses than a rural counterpart. Recently, women are increasingly allowed to access ICTs especially to learn skills or make career to earn in the urban areas. However, the reason for access is primarily derived from needs and benefits to family than personal needs. Personal needs and ambitions are recognised by women as reasons for pursuing ICTs more so in urban areas. However, the scope to engage with it in any meaningful way is guarded by and dependent on the family as much as for the rural women.

There is a visible increase in the status of women in terms of their status in family, economic independence, awareness and aspirations. However, these are mostly celebrated as success of the family itself and not so much of the individual women. Both in rural and urban areas women described their own success with ICTs in terms of their contribution to their family's economic and social upliftment. They expressed pleasure over their increased status, respect and voice within the family and their change in status outside the domestic sphere appears secondary in their narrative. This sense of derived need of women's access to ICTs does not signify the optimum use of ICTs by and for women. ICT as a virtual medium is immensely women friendly. But on the other hand, its efficiency to reach out to each and every corner is held back culturally and physically is also equally huge and needs a lot of attention as well. ICT allows women to operate and achieve their ambitions without much challenge to the patriarchal norms(for example, safe official desk jobs, working from home, flexible timings)allows them to fulfil their traditional role expectations as well.

Women rarely spoke of using ICT's in relation to their political rights and issues of liberties. ICT's is used as deemed fit under the set paradigms of patriarchy. To certain extent, ICT has enabled some of the Odia women to challenge the system of patriarchy quiet effectively, but the scope of potential use of ICT's or women empowerment remains sadly unexplored.

BARRIERS IN THE FIELD OF ICT

Women are still regarded as a minority when it comes to being the beneficiaries of the knowledge networking process. Women usually face imbalances in the ownership, control and regulation of these technologies. Since they face difficulties in harnessing the full potential offered by these technologies, they are also stopped from attaining the full benefits of the development. This is because of some of the generic reasons like low levels of literacy. Little access and control over economic resources, low decision-making, cultural restrictions and gender insensitive approaches to development. Apart from these reasons some other reasons are:-

(1) Awareness – ICT is fairly the new model of development and it requires a medium of sensitization and belief in the technology, a factor of time as well as willingness to accept it. Hence, lack of awareness on the use and benefit of this medium acts as a barrier.

(2) Capability and Skills – Women, because of their low literacy levels and lack of access to the technical education are more disadvantaged and excluded from their male counterparts at receiving full benefits of the provisions being provided by ICT. The lower number of female staffs in IRMA and OCAC, suggest that a few women go for technical education. In this context Amartya Sen's Capability Approach holds true, where the focus is basically on what individuals are able to do or capable of doing. Every individual should have the freedom or capabilities to choose the life they want to lead. But women who have the capability to work but are not able to fulfill their goals and wishes because of various barriers, like economic, social and cultural are further pushed into Social Exclusion. Hence, exclusion and the concept of capability deprivation are very much related to one another.

(3) Issue of Access – ICT and its mediums come with a financial cost. Women in our country have a little control over the family income. Hence, they lack decision-making power in investing in these technologies. One of the respondent's husband

said that, “I do not encourage my wife and children to watch T.V. and use telephone, because the telephone bill and electricity bill will go up, then who will pay. I don’t have so much money. ”

(4) Language Barriers – Most of the information present in computers are in English language. Hence, people especially form the rural areas who have no knowledge of English language or very little, find it quite difficult to use these mediums. Many of the women respondents, especially from the rural areas and who are slightly older in age had this problem.

(5) The staffs of both the organizations expressed their difficulty in working with women in terms of lack of projects, funds and policy provisions,

(6) The unavailability of trained project and managerial staff sometimes acts as a barrier in the proper functioning of the activities of the organizations.

(7) Occasional Maoist threats also creates problem in rural areas.

(8) Mobilization of people in rural areas, especially women is a problem (viewed by the staff of IRMA&OCAC).

ISSUES THAT NEEDS A CRITICAL LOOK

(1) The participation of women at the grass-root level is important, but their role in decision-making has been limited.

(2) There is a need for changing the stereotype roles for women. The views between communities living in different geographical locations will lead to cross-culture interaction of views, exchange of ideas and opinions.

(3) Participation of women from backward communities, physically challenged women, etc. should be encouraged more to come and avail the facilities being provided by the organizations and benefits out of it.

(4) There is a need to look for innovative ideas which would explore the specific task performed by the ICT models and which would directly benefit women.

(5) Women should be encouraged to go to higher education and technical education. An increase in the salaries of the staff of these organizations might be able to attract more women to come and apply in these organizations.

(6) There is a need for creating a class for ICT savvy women entrepreneur in both rural and urban areas. These groups of women entrepreneurs can help other women in availing the benefits provided by ICT and also set an example for other women.

SUGGESTIONS

The study comes up with some suggestive measures that can improve the participation of women in the knowledge networking sphere.

(1) The women should not be viewed as only beneficiaries but rather as partner, because without their participation, the works of these organizations remain incomplete.

(2) The organization should not underestimate the traditional skills which the women possess and hence they should work, using the medium of ICT to polish these skills and make them economically independent.

(3) Separate clauses needs to be added in the State and National Policies for women and the incorporation of innovative ideas which will directly benefit women.

(4) The organizations should try to empower women by providing them employment or by giving training to them which will harness their skills, thereby making them eligible for certain jobs.

(5) The organizations should focus on sustainability.

(6) Community participation should be encouraged and seen as an ideal parameter for the empowerment of women at the grass roots level.

(7) Since, the infrastructure of ICT is quite sophisticated, focus should be given on imparting Technical Skills and Education.

(8) Partnership should be built between both public and private sectors to intermingle the social development projects along with the corporate ICT ventures which can help in providing capital for the establishment of more ICT projects in both rural and urban areas.

(9) More number of women volunteers and staffs should be appointed.

(10) Separate training session for women as well as group training session and awareness campaigns should be conducted for both men and women, thereby helping in reducing the notion that ICT is a masculine space.

(11) More focus should be given on research and innovation, in order to understand the information requirements of women.

(12) Result based ICT models should be created which would give more importance to social benefits rather than individual profits.

(13) Sharing of workloads and responsibility should be given importance at the family, so that women do not get over-burdened with work and family responsibility and men realize that looking after the family is not the prerogative of women only.

(14) The technology should be designed in such a way that it takes under its purview the restricted free time that is available to many women.

(15) There is a need for the establishment of a gender sensitive policy.

LIMITATIONS OF THE STUDY

This study has its own limitations because of the unavailability of adequate number of organizations and projects working on women and ICT in Odisha. There is also a lack of relevant information and studies in Odisha related to ICTs which makes the collection of literature related to ICT and women in Odisha limited. The researcher also faced problems in interacting with the villagers of Badhinuapalli and Kanheipur due to a difference in dialect. Building rapport with rural women and their family members was a difficult task which the researcher could overcome after frequent visits and constant interaction and patient long conversations. Accessing the urban women is challenging owing to their pre-occupation with domestic chores, jobs and their lack of interest in interacting with a stranger. Getting appointments from the Government staffs and getting complete response on the questionnaire was quit tedious for the researcher.

The notion of empowerment doesn't hold true for every woman in the actual sense of the term. One of the respondent from Kanheipur village who learned computers from the CIC office located in the village and is earning her living by working in a primary school nearby said that, "We want to work and earn our living, so that we can give a better life to our children and improve our living standards".[2] Even though she was economically independent and was leading a fairly well-off life than before, she looked lost. There seemed to be something missing in her life and she desired to be free, not from her family responsibilities but merely experiencing the sense of freedom, in taking decisions, in doing something exclusively for herself. This underlying sense of unfulfilled desire was witnessed from almost all the respondents. Women, generally do things not exclusively for themselves or their own benefit directly but see their happiness in the happiness of their family. This in a way hints on Amartya Sen's capability approach, where he clearly mentions that if an individual wants to live like a hermit, he/she should be allowed to do so. It can be derived that, women who want

[2] Viewed by a respondent from Kanheipur village on September 15th, 2012.

to use the mediums of ICT for improving their livelihood can do so but those who don't want to, should also be given the freedom to make their own choice and not looked down upon. Women should have the liberty to make their own choices and act individually or in a group for their own benefit instead of thinking about the larger good and the do's and don'ts of the family and society at large

ICT, EMANCIPATION AND WOMEN

In the urban, the use of ICT- news paper, TV, internet is much higher compared to rural area. The urban women seems to be inhabiting more in the nuclear family set up than joint and gets to spend more time at her own discretion to spend more time on t.v, news paper, internet. She also has the availability of other ICT infrastructures- as internet café, coaching centers, better college environment with computer teaching, daily basis interface with digitalized systems as banks and other public service offices etc. Despite these we could say that the impact of ICTs in bringing about awareness and independence among the women has not been very remarkable. The change of perception amongst the family and community members has also been slow.

60 out of 70 respondents were of the opinion that the medium of ICT like newspapers, magazines, TV, etc. are chosen by their husbands, children or other family members. They give less priority to such engagements because the household chores come first for them. The children and husband have more access to t.v., computers and newspapers, thereby making them more of an expert on these mediums which ultimately gives them an edge over the female members of the household in taking decisions relating to the selection and use of the various ICT mediums. The very understanding of what women should spend time learning and knowing is on the time spent on nurturing skills of home keeping.

Thus, it could be interpreted from above observation that, use of ICT has been put more for the purpose of recreation, personal ambition of career growth, and enhancing skills within the permissible zone of expected roles of women as a member of a family. There is certain amount of assertion and aspirations that is visible among the respondents who have gone on to make use of ICT mediums. There is also a severe growth of confidence and self image among the women who have been able to earn a living for their family out of ICT media. However, such a state is achieved after much negotiation, persuasion and pressure. "I really wanted to study further and get a job but my parents got me married at a very early age and my in-laws were also not supportive, so I could not study further. I had to request my

husband and in-laws a lot so that they allow me to go and learn computers in the village CIC office, which is quiet close to our house as well for free of cost".[3]

This indicates that ICT in itself is not popularly held as a prospect friendly for women. This might call for a more gendered sensitive and supportive ICT programmes. Another point to be noticed is that, women are allowed to engage in ICT related activites as far as it does not upset the set traditions of women roles. She has to fulfill all the household chores, get the children readied, see off the husbands, attend to the in-laws and then if possible spare time for ICT. That too, in a way is benefiting the cause of family as a whole- enhancing family income etc. Nowhere in the fieldwork women mention on any prominent impact of ICT in their understanding or outplay of patriarchy in their lives. Thus, ICT in itself is not an endorsement of feminism or empowerment.

However, ICT because of its virtual avatar, which enables it to reach out to the very doors and rooms of every women, presenting minimum challenge to the traditional situation and position for women, it has presented itself as an efficient and very easy media for those women to enjoy opportunities beyond their immediate environment, who otherwise could not have managed to achieve it. Also, the snail pace change in the perception and expectation of the community, emanating from the success of the women using ICT should not be neglected. It has acted as an instrument for women to prove themselves in areas earlier prohibited, there by enabling them to be able to, hopefully in near future, making themselves heard and accounted to.

Lastly, I would like to mention that this thesis deals with several notions like feminism, women empowerment, exclusion, etc. but the central theme of the thesis is ICT and its impact on women. When it comes to ICT, opportunities for women in developing countries and expectations are quite high. It can open up new avenues or channels for the marginalized communities. It offers new avenues for bridging the information gap through interaction, sharing of views and ideas etc. Women need to be empowered through employment by enhancing their potentials by using the medium of ICT. It can be concluded that women of Nayapalli(N6 area), Badhinuapalli Gram Panchayat and Kanheipur Gram Panchayat are empowered to a certain extent through the help of Information and Communication Technology. It has changed their position from past. Even though the sphere of ICT is

[3] Viewed by a respondent from Badhinuapalli village on July 25th, 2012.

regarded as masculine space and women are required to act as deemed suitable under the set paradigms of patriarchy, a wave of change is slowly taking place. Women have started realizing the importance of ICT's and its benefits because they want their children to learn computers so that they can lead a better quality of life. This change may be slow and gradual but a seed of change has been sowed.

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PHOTOGRAPHS

PHOTOGRAPHS

OCAC Office Building, Bhubaneswar
Link: http://www.ocac.in/

IRMA-India Head Office, Bhubaneswar

IT Class being held in OCAC
Link: http://www.ocac.in/

IRMA-India Office (view from inside)

CIC-Office, Badhinuapalli
(With Display Board)

Delegates from USA on a tour of
CIC-Office, Badhinuapalli

Awareness Campaign in CIC- Office,
Kanheipur

Computer Class in Progress,
CIC-Office, Kanheipur

Villagers using CIC-Library, Badhinuapalli

Special Awareness Campaign for Women, Kanheipur

Awareness on Community Awareness Center, Badhinuapalli

Group Discussion being held to motivate women to join CIC, Kanheipur

ANNEXURE-I

INTERVIEW SCHEDULE – I

(Staff)

(This research is for the fulfilment of my doctorate degree in the Centre for the Study of Social Exclusion and Inclusive Policy, University of Hyderabad. Your honest response will be appreciated and will be kept confidential).

I - Personal Information:

1. Name :
2. Age :
3. Sex :
   a. Male
   b. Female
4. Education:
   a. High School
   b. Intermediate
   c. Graduation
   d. Post-Graduation
   e. Other (specify)_____
5. Caste:
   a. ST
   b. SC
   c. OBC
   d. General
   e. Others (specify)_____
6. Religion :
   a. Hindu
   b. Muslim
   c. Christian
   d. Others (specify)_____
7. Marital Status:
   a. Married
   b. Unmarried
   c. Widow
   d. Divorced
8. No of Children, in case of married (write the nos. in the following column):

S. No	Name	Sex	Age	Education	Present occupation
a.					
b.					
c.					
d.					
e.					

9. Family Type:
   a. Nuclear
   b. Joint
10. Total No. of people in the family_____
11. Position in the Organization _____
12. Husband/wife's occupation_____
13. Family Annual Income _____

II – Work Profile

1. Name of the organization _____
2. Affiliations of the organization:
   a. Government
   b. NGO
   c. International
   d. Private

e. Any other (specify) _____

3. Duration of association:
   a. 0 – 3 years
   b. 3 – 6 years
   c. 6 – 9 years
   d. 9 – 12 years
   e. Above 12 years
4. Position / Nature of engagement:
   a. Permanent
   b. Temporary
5. How many hours do you work in a day?
   a. 2 – 4 hours
   b. 4 – 6 hours
   c. 6 – 8 hours
   d. Above 8 hours
6. Do you work in weekends?
   a. Yes
   b. No
   c. If yes, why? _____
7. Total number of staff in your organization _____
8. Have you work in any other organization before you join the present organization?
   a. Yes
   b. No
   c. If yes, which organization (Specify) _____
9. What are the reasons for leaving the previous organization? (Tick whichever are applicable).
   a. Low wage
   b. Geographical location
   c. Better experience
   d. Work pressure
   e. Work culture
   f. Harassment
   g. Family pressure
   h. Others, specify _____

III – About the Organisation

1. When was the Organization established? _____
2. Total Number of staff _____
3. Total number of Female staff _____
4. Total number of Male staff _____
5. Missions of your organization

6. The Organization is finance / sponsored by
   a. State government
   b. Central government
   c. Donations
   d. Charity events
   e. Others, specify _____

IV - ICT related projects

1. Has your organization ever conducted any project on ICT?
   a. Yes
   b. No
2. If yes, how many times _____
3. The projects on ICT focus on:
   a. Urban areas
   b. Rural areas
   c. Both Urban and Rural areas
   d. Any others, specify _____
4. Has there been any project conducted on ICT and rural women?

a. Yes
b. No

5. If Yes, what was the response of the rural people?
   a. Excellent
   b. Satisfactory
   c. Average
   d. Below average
6. How was the participation of women?
   a. Excellent
   b. Satisfactory
   c. Average
   d. Below average

7. What is the approximate no. of women who have participated in the past 10 years?

   a. Below 500

   b. 500-1000

   c. 1000-5000

   d. Above 5000

8. What according to you is the level of awareness related to ICT amongst the rural populations?

   a. Well aware
   b. Partially aware
   c. Aware
   d. Un aware

9. Are these ICT projects benefiting the rural women?

   a. Yes
   b. No
   c. Can't say

10. If yes, in what way?

11. Do you think that more projects should be organized on ICT and women?

   a. Yes
   b. No
   c. Can't say

12. What are the challenges you face relating to ICT and rural women?

13. What do you think should be done to eradicate these problems?

14. What are your expectations from the government for the better functioning of your organization?

Thank you for your response.

Seema Mahapatra

Ph.D Centre for the Study of Social Exclusion and Inclusive Policy

University of Hyderabad

ANNEXURE – II

INTERVIEW SCHEDULE – II

(Women Respondents)

(This research is for the fulfillment of my Doctorate degree in the Centre for the Study of Social Exclusion and Inclusive Policy, University of Hyderabad. Your response is highly beneficial and your identity will be kept confidential.)

PERSONAL INFORMATION:

1. Name :
2. Age :
3. Education:
   a. Illiterate b. Primary school c. High School
   d. Intermediate e. Graduation f. Post-Graduation
   g. Other (specify)_____
4. Caste:
   a. ST b. SC c. OBC
   d. General e. Others (specify)_____
5. Religion :
   a. Hindu b. Muslim c. Christian d. Others (specify)_____
6. Your present occupation:
7. Occupation of Father:
8. Occupation of Mother:
9. Marital Status:
   a. Married b. Unmarried c. Widow d. Divorced
10. Husband's qualification_____
11. Husband's occupation_____
12. No. of Children, in case of married (write the nos. in the following column):

S. No	Name	Sex	Age	Education	Present occupation
a.					
b.					
c.					
d.					
e.					

13. Family Type:
    a. Nuclear b. Joint
14. Total No. of people in the family_____
15. Family Annual Income Rs. _____

WORK PROFILE:

1. Are you associated with any Organization? a) Yes b) No
2. If yes, please specify the name of the organization :
3. Affiliations of the Organization: a) Government b) NGO c) International
   d) Private e) Any Others, Specify _____
4. How long have you been associated with this organization? _____
5. Position/ Nature of Engagement: a) Permanent b) Temporary
6. Work Timing:
7. Number of Employees in the Organization/Group:
8. Average Monthly Income:
9. Personal Investments (if any): a) in Bank b) in Post Office c) Personal savings d) Any Others, Specify_____
10. Previous Engagements (If any):
11. Reasons for Leaving the Job: (Tick whichever are applicable):

    a) Work Pressure b) Work Timings

    c) Low Wage d) Geographical Location

e) Lack of Labor Union f) Harassment at Work Place

g) Any others, specify _____

ICT AND HOUSEHOLD ACTIVITIES:

I. What do you do during your free time?

a) Watch T.V b) Read Newspaper/ Magazines/ Books, etc.
c) Gardening d) Sleeping e) Chatting with Friends/ Neighbours

f) Any Others, Specify _____

II. NEWSPAPER, MAGAZINES, T.V, RADIO

1. Do you have any of the following at home:

Items	No.s	Mode of Subscription	Time Spent (per day)	Columns/Programmes followed regularly
Newspaper				
Magazines				
T.V				
Radio				

2) Do you think the information from media helps you in day to day household work regarding:-

Benefits	Newspaper	Magazine	T.V	Radio
Child Rearing				
Cooking				
Various Chores				
Budgeting				
New household aid and application				
Women Health				
Women Issues				
Career				
Relationship				
Exposure to World				

3) Do you feel the need to spend more time on?

a) Newspaper Yes / No / can't say

b) Magazines Yes / No / can't say

c) T.V Yes / No / can't say

d) Radio Yes / No / can't say

e) Any Other, Specify _____

4) Do you allow your children to follow?

a) Newspaper Yes / No / can't say

b) Magazines Yes / No / can't say

c) T.V Yes / No / can't say

d) Radio Yes / No / can't say

e) Any Other, Specify _____

5) Are you aware of any women related Programmes or Columns?

a) Newspaper Yes / No / can't say . If yes, specify _____

b) Magazines Yes / No / can't say. If yes, specify _____

c) T.V Yes / No / can't say . If yes, specify _____

d) Radio Yes / No / can't say. If yes, specify _____

6) Do you discuss the columns or programmes you follow with other women in the household or other peers in the neighborhood?

a) Yes b) No c) Sometimes d) Can't Say

e) Any Other, Specify _____

7) Do you discuss the columns and programmes with the men in the household?

a) Yes b) No c) Sometimes d) Can't say

e) Any other, Specify _____

8) Could you tell us your views on the role of Newspaper, Magazines, T.V, and Radio in the lives of women in your locality?

III. TELEPHONE

1) Do you have a telephone?

a) Yes b) No

2) If yes, then which one of the following do you use (you can tick more than one)?

a) Landline b) Mobile c) Public Telephones d) Skype

d) Any others, specify _____

3) Who uses the telephone the most in your family?

a) Yourself b) Husband c) Parents d) Children

e) Any other, specify _____

4) Do you call/operate the telephone on your own?

a) Yes b) No

5) If No, then who operates it for you?

a) Husband b) Friends c) Children d) Relatives

e) Any other, specify _____

6) Whom do you call the most?

a) Family b) Friends c) Relatives d) Children e) Clients

f) Any other specify _____

7) Who pays the bill?

a) Self b) Husband c) Parents d) Siblings e) Friends

f) Any other, specify _____

8) Do you use any of these services?

a) Weather Information (Y/N)

b) Railway Information (Y/N)

c) Ambulance (Y/N)

d) Police (Y/N)

e) Any other helpline, please specify _____

9) Do you consider the monthly expenses incurred on it to be costly?

a) Yes b) No c) Can't Say

d) Any other, specify _____

10) How do you think telephone has affected lives of women in your locality?

IV. COMPUTERS and INTERNET

1) Do you know how to operate computer?

a) Yes b) No

2) If No, are you interested in learning computer?

a) Yes b) No c) can't say

3) Do you have computer at home?

a) Yes b) No

4) If Yes, then what do you have?

a) Desktop b) Laptop c) Ipad

5) When did you buy it? _____

6) How did you buy it?

a) Payment by cash b) Loan c) Installments d) Rent

e) Any other, specify _____

7) When did you first use the computer?

a) School b) College c) Office d) Home e) Internet Café

f) Any other, specify _____

8) Who trained you in using computers?

a) School Teacher b) College teacher c) Trainer in Office

d) Husband e) Children f) Friends/Relatives

g) Any other, specify _____

9) What were you trained in it?

a) Basics b) Internet and Web page designing c) Programming's

d) Any others, specify _____

10) Do you use computer for your work?

a) Yes b) No c) Sometimes d) Can't Say

11) For any further information on a topic, where do you go?

a) Surf the Internet b) Ask Friends c) Enquire in the Office d) Can't Say

e) Any other, specify _____

12) How often do you use computer (hours spent in a day)?

a) 0-2hrs b) 2-4hrs c) 4-6hrs d) 6-8hrs e) More than 8hrs

13) Do you use any special software's/applications for your work?

a) Yes b) No

14) If Yes, then please specify

15) How do you find the computer to be?

a) Easy b) Complicated c) Very Complicated d) Can't Say

16) Please list the challenges or problems faced in using computers?

17) How has your skills in computer benefitted your work?

18) Does every woman in the village require access to computer?

a) Yes b) No c) Can't Say

19) If Yes, then for what purposes they need computer, please specify

20) What all is needed to enable them to use computer?

21) How do your family members respond to your using of computer?

22) How do peers and neighbors respond to your using of computer?

23) Do you use internet? a) Yes b) No c) Sometimes

24) How often do you make use of internet connections in a week?

a) 1-2 times b) 2-4 times c) 4-6 times d) Everyday e) Not sure

25) Do you keep an email ID?

a) Yes b) No

26) If Yes, then is it:

a) Individual b) Group c) Both d) Can't Say

27) Can you list out some of the most frequently visited sites?

28) How has learning of computer and internet skills affected your self-image and how do you feel?

V. SECTION ON MEN

1. Do you follow any of these?

a) Newspaper Yes / No / can't say.

b) Magazines Yes / No / can't say.

c) T.V Yes / No / can't say .

d) Radio Yes / No / can't say.

2. Does women and children in your house access them too?

a) Newspaper Yes / No / sometimes.

b) Magazines Yes / No / sometimes.

c) T.V Yes / No / sometimes.

d) Radio Yes / No / sometimes.

3. Do you encourage the women in your house to access and make use of them?

a) Newspaper Yes / No / sometimes/ Can't Say

b) Magazines Yes / No / sometimes/ Can't Say

c) T.V Yes / No / sometimes/ Can't Say

d) Radio Yes / No / sometimes/ Can't Say

e) Telephone Yes / No / sometimes/ Can't Say

f) Computer Yes / No / sometimes/ Can't Say

5. Are you ready to look after the family and other household responsibilities when women have to spend their time learning the use of computers etc.?

a) Yes b) No c) Maybe d) Can't Say

e) Any other, specify _____

Thank you for your response.

Seema Mahapatra

Ph.D Centre for the Study of Social Exclusion and Inclusive Policy

University of Hyderabad

ANNEXURE – III

National Telecom Policy - 2012

(NTP - 2012)

PREAMBLE

Telecommunication has emerged as a key driver of economic and social development in an increasingly knowledge intensive global scenario, in which India needs to play a leadership role. National Telecom Policy-2012 is designed to ensure that India plays this role effectively and transforms the socio-economic scenario through accelerated equitable and inclusive economic growth by laying special emphasis on providing affordable and quality telecommunication services in rural and remote areas. Thrust of this policy is to underscore the imperative that sustained adoption of technology would offer viable options in overcoming developmental challenges in education, health, employment generation, financial inclusion and much else. NTP-2012 is an initiative to create a conducive policy framework to address these issues and to touch lives of all citizens and transform India. By formulating a clear policy regime, NTP-2012 endeavors to create an investor friendly environment for attracting additional investments in the sector apart from generating manifold employment opportunities in various segments of the sector. Availability of affordable and effective communications for the citizens is at the core of the vision and goal of the National Telecom Policy – 2012.

2. The last decade is characterised by significant penetration of telecommunications in India. The New Telecom Policy 1999 has been a catalyst for growth of the telecom sector. The number of telephone connections, at the end of February 2012, was 943 million, as compared to 41 million at the end of December 2001. This growth has been fuelled by the cellular segment (mobile phones) which alone accounted for 911 million connections at the end of February 2012. The composition of the telecom sector too has witnessed a structural change, with the private sector accounting for 88 % of the total connections.

3. Today, India is one of the fastest growing telecom markets in the world. The unprecedented increase in teledensity and sharp decline in tariffs in the Indian telecom sector have contributed significantly to the country's economic growth. Besides contributing to about 3% to India's GDP, Telecommunications, along with Information Technology, has greatly accelerated the growth of the economic and social sectors.

4. The National Telecom Policy 2012 (NTP 2012) is conceived against this backdrop. The vision is to transform the country into an empowered and inclusive knowledge-based society, using telecommunications as a platform.

5. Notwithstanding the economic progress over the last decade, the digital divide in the country continues to be significant. On the one hand, expansion of telecommunications in the rural areas has been slower than urban areas, with the former accounting for only 34% of the total connections. On the other, the ability of the poorer sections of the society, both in rural and urban areas, to benefit from technology needs to be enhanced. NTP-2012 has the vision ***Broadband on Demand*** and envisages leveraging telecom infrastructure to enable all citizens and businesses, both in rural and urban areas, to participate in the Internet and web economy thereby ensuring equitable and inclusive development across the nation. It provides the enabling framework for enhancing India's competitiveness in all spheres of the economy. NTP-2012 envisages support to platform neutral services in e-governance and m-governance in key social sectors such as health, education and agriculture that are at present limited to a few organizations in isolated pockets. This will expand the footprint of these services and thus foster an atmosphere of participative democracy delivery model that is truly citizen-centric.

6. Telecommunications is no longer limited to voice. The evolution from analog to digital technology has facilitated the conversion of voice, data and video to the digital form. Increasingly, these are now being rendered through single networks bringing about a convergence in networks, services and also devices. Hence, it is now imperative to move towards convergence between telecom, broadcast and IT services, networks, platforms, technologies and overcome the existing segregation of licensing, registration and regulatory mechanisms in these areas to enhance affordability, increase access, delivery of multiple services and reduce cost. It will be a key enabler of equitable and inclusive growth. The policy aims to address and enable the coordinated action to respond to the dynamic needs resulting from confluence of telecom, broadcasting and IT sectors.

7. Given the continued predominant role of wireless technologies in delivery of services in ICT sector, NTP-2012 incorporates framework for increasing the availability of spectrum for telecom services including triple play services (voice, video and data) for which broadband is the key driver. This will be facilitated by deployment of services through appropriate instrumentalities, while safeguarding national interests.

8. The emerging technology trends in electronics hardware, telecom connectivity and IT will make it possible for millions of citizens to access services electronically in self-service mode using mobile phones and the Internet or through assisted service points such as Common Service Centres etc. Once a mere communication device, the Telephone has now the potential of being an instrument of empowerment. There is need to reorient the telecommunication policy. This vision is made possible through ubiquitous network connectivity of mobile technology, broadband Internet, fiber penetration in all villages, high-technology low-cost affordable devices and software solutions which enable electronic

access to service including m-payment. A unique AADHAR based electronic authentication framework would be integral part of providing service to the people. Cloud computing will significantly speed up ability to design and roll out services, enable social networking and participative governance and m-Commerce at scale which were not possible through traditional technology solutions.

9. A concerted effort to boost manufacturing activity is now exigent as robust economic growth in the country is leading to an extraordinarily high demand for electronic products in general and telecom products in particular. NTP-2012 provides a roadmap for India to become a leader in cutting edge, state of the art technologies through R&D and creation and incorporation of Indian IPRs in global standards. This will require measures for boosting entrepreneurship and creating a major global manufacturing hub for telecommunication equipment to achieve self-sufficiency while squarely addressing security and strategic concerns. At the same time establishment of processes and standards for protection of the environment will also be required.

10. For the continued growth trajectory of telecom sector, it is crucial to establish appropriate mechanisms to achieve balance between competition and consolidation while dealing with the legacy issues in the sector, thus benefiting both the users and providers of telecommunication services.

11. NTP-2012 recognises that the rapid growth in the telecom sector requires to be supported by an enhanced pace of human capital formation and capacity building. It becomes imperative to put in place an integrated skill development strategy for the converged ICT sector as a whole so that there is continuous up-gradation of skills in tune with the technological developments. The cornerstone of this strategy is to derive maximal dividend from our young population and their creative abilities. The advent of technologies like cloud computing present a historic opportunity to catapult India's vaunted service delivery capabilities to a new level domestically as well globally.

12. Introduction of new technologies has posed fresh challenges in network security, communication security and communication assistance to law enforcement agencies. NTP-2012 provides a clear strategy for squarely addressing these concerns.

13. The PSUs have played a pre-eminent role in provision of telecom services in the country, particularly in rural, remote, backward and hilly areas. Contribution of BSNL and MTNL to broadband penetration in the country is significant. The importance of PSUs in meeting the strategic and security needs of the nation can also not be understated. This policy recognises that these PSUs will continue to play such important role.

14. Institutions form the backbone for policy implementation if the policy objectives are to be fully realised. World over, the telecom regulator plays a critical role in the orderly growth of the telecommunication industry, balancing the interests of both the consumers and the service providers. By virtue of the TRAI Act, India has an independent regulator. NTP 2012 seeks to further empower the regulator.

15. NTP-2012 recognises the importance of creation of the robust and resilient telecom networks for adequately addressing the need for proactive support for mitigating disasters, natural and manmade.

16. NTP-2012 recognises futuristic roles of Internet Protocol Version 6 (IPv6) and its applications in different sectors of Indian economy.

I. VISION

To provide secure, reliable, affordable and high quality converged telecommunication services anytime, anywhere for an accelerated inclusive socio-economic development.

II. MISSION

1. To develop a robust and secure state-of-the-art telecommunication network providing seamless coverage with special focus on rural and remote areas for bridging the digital divide and thereby facilitate socio-economic development.

2. To create an inclusive knowledge society through proliferation of affordable and high quality broadband services across the nation.

3. To reposition the mobile device as an instrument of socio-economic empowerment of citizens.

4. To make India a global hub for telecom equipment manufacturing and a centre for converged communication services.

5. To promote Research and Development, Design in cutting edge ICTE technologies, products and services for meeting the infrastructure needs of domestic and global markets with focus on security and green technologies.

6. To promote development of new standards to meet national requirements, generation of IPRs and participation in international standardization bodies to contribute in formation of global standards, thereby making India a leading nation in the area of telecom standardization.

7. To attract investment, both domestic and foreign.

8. To promote creation of jobs through all of the above.

III. OBJECTIVES

1. Provide secure, affordable and high quality telecommunication services to all citizens.

2. ***Increase rural teledensity from the current level of around 39 to 70 by the year 2017 and 100 by the year 2020.***

3. *Provide affordable and reliable* ***broadband-on-demand by the year 2015*** *and* ***to achieve 175 million broadband connections by the year 2017 and 600 million by the year 2020 at minimum 2 Mbps download speed and making available higher speeds of at least 100 Mbps on demand.***

4. Enable citizens to participate in and contribute to e-governance in key sectors like health, education, skill development, employment, governance, banking etc. to ensure equitable and inclusive growth.

5. ***Provide high speed and high quality broadband access to all village panchayats through a combination of technologies by the year 2014 and*** progressively to all villages and habitations by 2020***.***

6. ***Promote innovation, indigenous R&D and manufacturing*** to serve domestic and global markets, by increasing skills and competencies.

7. ***Create a corpus to promote indigenous R&D, IPR creation, entrepreneurship, manufacturing, commercialisation and deployment of state-of-the-art telecom products and services during the 12th five year plan period.***

8. Promote the ecosystem for design, Research and Development, IPR creation, testing, standardization and manufacturing i.e. complete value chain for domestic production of telecommunication equipment to ***meet Indian telecom sector demand to the extent of 60% and 80% with a minimum value addition of 45% and 65% by the year 2017 and 2020 respectively.***

9. ***Provide preferen***ce to domestically manufactured telecommunication products, in procurement of those telecommunication products which have security implications for the country and in Government procurement for its own use, consistent with our World Trade Organization (WTO) commitments.

10. ***Develop and establish standards to meet national requirements, generate IPRs***, and participate in international standardization bodies to contribute in formulation of global standards, thereby making India a leading nation in the area of international telecom

standardization. This will be supported by establishing appropriate linkages with industry, R&D institutions, academia, telecom service providers and users.

11. ***Simplify the licensing framework*** to further extend converged high quality services across the nation including rural and remote areas. This will not cover content regulation.
12. Strive to create ***One Nation - One License*** across services and service areas.
13. Achieve ***One Nation - Full Mobile Number Portability*** and work towards ***One Nation - Free Roaming***.
14. ***Reposition the mobile phone*** from a mere communication device ***to an instrument of empowerment*** that combines communication with proof of identity, fully secure financial and other transaction capability, multi-lingual services and a whole range of other capabilities that ride on them and transcend the literacy barrier.
15. Encourage development of mobile phones based on open platform standards.
16. Deliver high quality seamless voice, data, multimedia and broadcasting services on ***converged networks*** for enhanced service delivery to provide superior experience to users.
17. Put in place a simplified Merger & Acquisition regime in telecom service sector while ensuring adequate competition.
18. Optimize delivery of services to consumers irrespective of their devices or locations by ***Fixed-Mobile Convergence*** thus making available valuable spectrum for other wireless services.
19. Promote an ecosystem for participants in VAS industry value chain to make India a global hub for Value Added Services (VAS).
20. Ensure adequate availability of spectrum and its allocation in a transparent manner through market related processes. ***Make available additional 300 MHz spectrum for IMT services by the year 2017 and another 200 MHz by 2020.***
21. Promote efficient use of spectrum with provision of regular ***audit of spectrum usage***.
22. De-licensing additional frequency bands for public use.
23. ***Recognize telecom as Infrastructure Sector*** to realize true potential of ICT for development.
24. Address the Right of Way (RoW) issues in setting up of telecom infrastructure.
25. Mandate an ecosystem to ensure setting up of a ***common platform for interconnection*** of various networks for providing non-exclusive and non-discriminatory access.

26. Strengthen the framework to address the environmental and health related concerns pertaining to the telecom sector.

27. Enhanced and continued ***adoption of green policy in telecom*** and incentivise use of renewable energy sources for sustainability.

28. ***Protect consumer interest*** by promoting informed consent, transparency and accountability in quality of service, tariff, usage etc.

29. ***Strengthen the grievance redressal mechanisms*** to provide timely and effective resolution.

30. Strengthen the ***institutional framework to enhance the pace of human capital formation*** and capacity building by assessing and addressing educational and training needs of the sector.

31. Encourage ***recognition and creation of synergistic alliance of public sector*** and other organisations of Department of Telecommunications (DoT). This should be achieved through appropriate policy interventions and support for optimum utilisation of their resources and strengths in building a robust and secure telecom and information infrastructure.

32. Evolve a ***policy framework for financing the sector*** consistent with long term sustainability.

33. Put in place appropriate fiscal and financial incentives required for indigenous manufacturers of telecom products and R&D institutions.

34. Achieve substantial ***transition to new Internet Protocol (IPv 6)*** in the country in a phased and time bound manner by 2020 and encourage an ecosystem for provision of a significantly large bouquet of services on IP platform.

35. Strengthen the institutional, legal, and regulatory framework and re-engineer processes to bring in more efficiency, timely decision making and transparency.

36. Put in place a web based, real time e-governance solution to support online submission of applications including processing, issuance of licences and clearances from DoT.

IV. STRATEGIES

1. BROADBAND, RURAL TELEPHONY AND UNIVERSAL SERVICE OBLIGATION FUND (USOF)

1.1. To develop ***an eco-system for broadband*** in close coordination with all stakeholders, including Ministries/ Government Departments/ Agencies to ensure availability of media for last mile access, aggregation layer, core network of adequate capacity, affordable equipment including user devices, terminals and

Customer Premise Equipment and an environment for development of relevant applications. Formulate policies to promote competition by encouraging service providers, whether large or small, to provide value added services under equitable and non-discriminatory conditions.

1.2. To recognise telecom, including broadband connectivity as a basic necessity like education and health and work towards **'Right to Broadband'.**

1.3. To lay special emphasis on ***providing reliable and affordable broadband access to rural and remote areas*** by appropriate combination of optical fibre, wireless, VSAT and other technologies. Optical fibre network will be initially laid up to the village panchayat level by funding from the Universal Service Obligation Fund (USOF). Extension of optical fibre connectivity from village panchayats to be taken up progressively to all villages and habitations. Access to this Optical Fibre Network will be open, non-discriminatory and technology neutral.

1.4. Provide appropriate incentives for rural rollout.

1.5. ***To revise the existing broadband download speed of 256 Kbps to 512 Kbps and subsequently to 2 Mbps by 2015 and higher speeds of at least 100 Mbps thereafter.***

1.6. To encourage Fibre To The Home (FTTH) with enabling guidelines and policies, favouring fast transformation of cities and towns into ***Always Connected*** society.

1.7. To incorporate enabling provisions in the current regulatory framework so that existing infrastructure including cable TV networks are optimally utilised for extending high quality broadband services in rural areas also.

1.8. To establish appropriate institutional framework to coordinate with different government departments/agencies for laying and upkeep of telecom cables including ***Optical Fibre Cables*** for rapid expansion of broadband in the country.

1.9. To ***leverage the mobile device and SIM Card with enhanced features*** for enabling secure transactional services including online authentication of identity and financial services.

1.10. To promote synergies between roll-out of broadband and various Government programs viz e- governance, e-panchayat, MNREGA, NKN, AADHAR, AAKASH tablet etc.

1.11. To ***ensure availability of adequate spectrum*** to meet current and future demand for microwave access/ backhaul, in appropriate frequency bands.

1.12. To stimulate the demand of broadband applications and services, work closely with Department of IT in the promotion of ***local content creation in regional languages*** which would enhance the investment ***in All-Internet Protocol (IP) networks*** including NGN.

1.13. To promote the use of ***energy efficient equipment and renewable energy technologies*** to achieve long term sustainability.

1.14. To undertake periodic review of methodology adopted for utilising USO fund and benchmarking the same against the best practices followed in other countries.

1.15. To provide continued support from USO fund for telecom services, including converged communication services in commercially unviable rural and remote areas.

2. R&D, MANUFACTURING AND STANDARDIZATION OF TELECOMMUNICATION EQUIPMENT

2.1. To ***promote R&D, design, development and manufacturing*** in the domestic telecom equipment manufacturing.

2.2. To create a road-map to align technology, demand, standards and regulations for enhancing competitiveness of domestic manufacturing.

2.3. To set up a ***Council consisting of experts*** from Telecom Service Providers, Telecom Manufacturing Industry, Government, Academia and R&D institutions. The Council would:

2.3.1. Carry out technology and product development forecast.

2.3.2. Evolve, and periodically update the national program for technology/product development.

2.3.3. Be a nodal group to monitor and ensure the implementation of various recommendations made for promoting indigenous R&D, IPR creation, and manufacturing and deployment of products and services.

2.4. To ***promote synergy amongst manufacturers, R&D centres, academia, service providers and other stakeholders*** for achieving collaboration and reorientation of their efforts for development and deployment of new products and services suited to Indian environment and meeting security needs of the country.

2.5. To ***assist entrepreneurs*** to develop and commercialize Indian products by making available requisite funding (pre-venture and venture capital), management and mentoring support.

2.6. To ***create*** **fund** to promote indigenous R&D, Intellectual Property creation, entrepreneurship, manufacturing, commercialising and deployment of state-of-the-art telecom products and services.

2.7. To promote ***setting up of Telecommunications Standard Development Organisation (TSDO)*** as an autonomous body with effective participation of the government, industry, R&D centres, service providers, and academia to drive consensus regarding standards to meet national requirements including security needs. It will facilitate access for all the stakeholders in the International Standards Development Organisations and act as an advisory body for preparation of national contributions for incorporation of Indian requirement/IPRs/standards in the international standards.

2.8. To ***notify specific guidelines for according preference to domestically manufactured telecommunication equipment and products*** either for reasons of security or for Government procurement in accordance with relevant government decisions and policies in this regard.

2.9. To incentivise telecom service providers to use indigenous products by encouraging:

2.9.1. Commitment to purchase Indigenous products that are comparable in price and performance to imported products.

2.9.2. Commitment to participate in trials of newly created Indigenous products, nurture them and place pilot orders.

2.9.3. Funding R&D and support Indian IPR creation and participate in creation of standards.

2.10. To ***support Electronic Design and Manufacturing Clusters*** for design, development and manufacture of telecommunication equipment.

2.11. To facilitate provision of appropriate fiscal incentives through a ***Modified Special Incentive Package Scheme (M-SIPS)*** in manufacturing of telecom equipment.

2.12. To ***mandate testing and certification*** of all telecom products for conformance, performance, interoperability, health, safety, security, EMF/EMI/EMC, etc. to ensure safe-to-connect and seamless functioning in the existing and future networks.

2.13. To ***create suitable testing infrastructure*** for carrying out conformance testing, certification and to aid in development of new products and services. These state-of-the-art labs/infrastructure would be suitably positioned to make them available

to engineering/academic institutions to assist the scholars in telecom product development.

2.14. To appropriately ***incentivise export of telecom equipment and services***. Synergies among the various telecom players (manufacturers and service providers) would be leveraged to provide integrated communication solutions for exports.

2.15. To facilitate ***putting in place a stable tax regime*** for telecom equipment manufacturing.

2.16. To ***provide appropriate incentives to the Indian product manufacturers*** for domestic deployment and exports.

3. LICENSING, CONVERGENCE AND VALUE ADDED SERVICES

3.1. To orient, review and harmonise the legal, regulatory and licensing framework in a time bound manner to ***enable seamless delivery of converged services*** in a technology and service neutral environment. Convergence would cover:

3.1.1. Convergence of services i.e. convergence of voice, data, video, Internet telephony (VoIP), value added services and broadcasting services.

3.1.2. Convergence of networks i.e. convergence of access network, carriage network (NLD/ ILD) and broadcast network.

3.1.3. Convergence of devices i.e. telephone, Personal Computer, Television, Radio, set top boxes and other connected devices.

3.2. To facilitate ***convergence of local cable TV networks*** post digitalisation.

3.3. To ***move towards Unified Licence regime*** in order to exploit the attendant benefits of convergence, spectrum liberalisation and facilitate ***delinking of the licensing of Networks from the delivery of Services to the end users*** in order to enable operators to optimally and efficiently utilise their networks and spectrum by sharing active and passive infrastructure. This will enhance the quality of service, optimize investments and help address the issue of the digital divide. This new licensing regime will address the requirements of level playing field, rollout obligations, policy on merger & acquisition, non-discriminatory interconnection including interconnection at IP level etc. while ensuring adequate competition.

3.4. To put in place a liberalized merger and acquisition policy with necessary thresholds, while ensuring adequate competition.

3.5. To ***delink spectrum in respect of all future licences***. Spectrum shall be made available at a price determined through market related processes.

3.6. New Unified licensing regime will ***provide flexibility to operators to operate any or all segment of services of the total basket of services*** provided in the scope of licence. The entry fee regime will also be made flexible accordingly.

3.7. To promote introduction of area specific services and applications.

3.8. To ***facilitate resale at the service level*** under the proposed licensing regime – both wholesale and retail, for example, by introduction of virtual operators – in tune with the need for robust competition at consumer end while ensuring due compliance with security and other license related obligations.

3.9. To ***frame appropriate Policies*** for new licensing framework, migration of existing licensees to new framework, exit policy, measures for ensuring adequate competition etc. in consultation with TRAI.

3.10. To put in place an appropriate regulatory framework for delivery of ***VAS at affordable price*** so as to fuel growth in entrepreneurship, innovation and provision of ***region specific content in regional languages***.

3.11. To put in place a framework ***to regulate the carriage charges, which are content neutral and based on the bandwidth utilisation***. This will also encourage non value added services such as provision of data and information over the mobile platform.

3.12. To endeavour to make available Global Mobile Personal Communication by Satellite (GMPCS) compliant with security requirements.

3.13. To extend ***Intra-circle mobile number portability facility on nationwide basis*** so that the users can retain their mobile number while shifting from one service area to another, irrespective of the service provider.

3.14. To review roaming charges with the ultimate objective of ***removing the roaming charge across the nation***.

3.15. To enable and enforce the VOIP facility to enhance consumer affordability.

4. SPECTRUM MANAGEMENT

4.1. To move at the earliest towards liberalisation of spectrum to enable use of spectrum in any band to provide any service in any technology as well as to permit ***spectrum pooling, sharing and later, trading*** to enable optimal utilisation of spectrum through appropriate regulatory framework.

4.2. To undertake ***periodic audit*** of spectrum utilisation to ensure its efficient use.

4.3. To refarm spectrum and allot alternative frequency bands or media to service providers from time to time to make spectrum available for introduction of new technologies for telecom applications.

4.4. To ***prepare a roadmap*** for availability of additional spectrum every 5 years.

4.5. To make available adequate globally harmonised IMT spectrum in 450 MHz, 700 MHz, 1800 MHz, 1910 MHz, 2.1 GHz, 2.3 GHz, 2.5 GHz, 3.5 GHz bands and other bands to be identified by ITU for commercial mobile services.

4.6. To identify additional frequency bands periodically, for ***exempting them from licensing requirements*** for operation of low power devices for public use.

4.7. To consider requirement of spectrum in certain frequency bands in small chunks at specified locations for ***encouraging indigenous development of technologies/ products and their deployment***.

4.8. To ***review the existing geographical unit of allocation of spectrum*** with a view to identifying scope for optimization.

4.9. To ***promote use of white spaces*** with low power devices, without causing harmful interference to the licensed applications in specific frequency bands by deployment of Software Defined Radios (SDRs), Cognitive Radios (CRs), etc.

4.10. To establish and ***strengthen Institute of Advanced Radio Spectrum Engineering and Management Studies (IARSEMS)*** as a Government Society for undertaking policy research in radio spectrum engineering, management/radio monitoring and related aspects.

5. TELECOM INFRASTRUCTURE/ ROW ISSUES, GREEN TELECOM, CLEAR SKYLINE, MITIGATION EFFORTS DURING DISASTERS AND EMERGENCIES

5.1. To emphasize the active role of both private sector and Government including the State Governments and Local bodies to enable the growth of telecom infrastructure necessary for meeting the telecommunication demand of the country and leveraging USOF where appropriate.

5.2. To work towards ***recognition of telecom as Infrastructure Sector for both wireline and wireless*** and extension of the benefits available to infrastructure sectors to telecom sector also, to realize true potential of ICT for development.

5.3. To review and ***simplify sectoral policy for Right of Way*** for laying cable network and installation of towers, etc. for facilitating smooth coordination between the service providers and the State Governments/ local bodies.

5.4. To facilitate development of ***guidelines for provision of common service ducts*** for orderly growth of telecom infrastructure in consultation with all concerned Ministries/ Departments, State Governments and Local bodies.

5.5. To ***mandate for mapping*** and submission of information of the infrastructure assets on the standards based inter-operable ***GIS platform*** by all telecom infrastructure/ service providers to the licensor.

5.6. To review Standing Advisory Committee on Frequency Allocation (SACFA) clearance process for faster and simplified site clearances.

5.7. To facilitate increased use of alternative sources (Renewable Energy Technologies) of energy for powering telecom networks through active participation of all the stakeholders – the government, the telecom industry and the consumer for green telecommunications. Sector specific schemes and targets for promotion of green technologies will be finalised in consultation with Ministry of New and Renewable Energy (MNRE) and other stakeholders.

5.8. To ***promote the use of energy efficient equipment*** including low power wireless devices in telecom networks and adopt measures for the reduction of carbon footprint in the telecom sector.

5.9. To ***promote use of In-Building Solutions (IBS) and Distributed Antenna Systems (DAS)*** and their siting in coordination with Ministry of Urban Development by aligning the National Building Code as well as embedding these critical requirements in the process of developmental planning and finalization of master plans for rural and urban areas in consultation with the State Governments.

5.10. To undertake ***periodic review of EMF radiation standards*** for mobile towers and mobile devices with reference to international safety standards.

5.11. To encourage use of innovative methods like camouflaging, landscaping, monopole towers and stealth structures to conform to aesthetic requirements.

5.12. To prescribe sectoral ***Standard Operating Procedures*** for aiding effective and early mitigation during disasters and emergencies.

5.13. To create appropriate regulatory framework for provision of reliable means of public communication by Telecom Service Providers during disasters.

5.14. To encourage use of ICTs in prediction, monitoring and early warning of disasters and early dissemination of information.

5.15. To facilitate an ***institutional framework to establish nationwide Unified Emergency Response Mechanism*** by providing nationwide single access number for emergency services.

6. QUALITY OF SERVICE AND PROTECTION OF CONSUMER INTEREST

6.1. To strengthen the regulator for ensuring compliance of the prescribed performance standards and Quality of Service (QoS) parameters by the Telecom Service Providers.

6.2. To formulate a ***Code of Practice for Sales and Marketing Communications*** to improve transparency as well as address security issues relating to Customer Acquisition.

6.3. To support the sector regulator in its efforts to enhance consumer awareness about services, tariffs, and QoS.

6.4. To make mandatory provision for ***web based disclosure of area coverage*** by telecom service providers.

6.5. To facilitate ***establishment of a National Mobile Property Registry*** for addressing security, theft and other concerns including reprogramming of mobile handsets.

6.6. To ***undertake legislative measures*** to bring disputes between telecom consumers and service providers ***within the jurisdiction of Consumer Forums*** established under Consumer Protection Act.

7. SECURITY

7.1. To mandate and enforce that the Telecom Service Providers take adequate measures to ensure the security of the communication flowing through their network by adopting contemporary information security standards.

7.2. To provide communication assistance to Law Enforcement Agencies (LEAs) through regulatory measures in tune with the extant license guidelines and in conformity with Indian Telegraph Act keeping in view individual privacy and following international practices to the extent possible for fulfilling National Security needs. To develop and deploy State of art system for providing assistance to LEAs.

7.3. To create an institutional framework through regulatory measures to ensure that ***safe-to-connect*** devices are inducted into the Telecom Network and service providers take measures for ensuring the security of the network.

7.4. To build national capacity in all areas - specifically security standards, security testing, interception and monitoring capabilities and manufacturing of critical telecom equipment - that impinges on Telecom network security and communication assistance for law enforcement.

7.5. To ensure security in an increasingly insecure cyber space, indigenously manufactured multi-functional SIM cards with indigenously designed chips incorporating specific laid down standards are considered critical. The whole electronics eco-system for this and other purposes, starting from the wafer fab needs to be built and hence is viewed as a key policy objective and outcome.

7.6. To mandate standards in the areas of functional requirements, safety and security and in all possible building blocks of the communication network i.e. devices, elements, components, physical infrastructure like towers, buildings etc.

7.7. To develop a rational criterion for sharing of costs beyond a threshold limit between Government and the service providers in implementing security measures.

8. SKILL DEVELOPMENT

8.1. To put in place an ecosystem:

8.1.1. ***To assess the manpower requirement at different skill and expertise levels by partnering*** with ***National Skill Development Council*** and ***industry*** to identify the relevant needs of the sector and prepare a roadmap.

8.1.2. To advise and assist Ministry of Human Resource Development (MHRD) to periodically upgrade academic curriculum of telecommunication courses.

8.1.3. To create an enabling framework including funding mechanism to meet the demand for human resources in the sector in partnership with Ministry of Human Resource Development (MHRD).

8.1.4. To form a high level Apex body (supported by advisory groups comprising representatives from industry, academia, PSUs, etc.) to oversee and to act as guiding and enabling source for all aspects relating to skill development in telecom field.

8.2. To strengthen and develop National Telecom Institute for Policy Research, Innovation and Training (NTIPRIT) as an institute of international repute, for

capacity building and enabling research in India centric technologies and policies in telecom domain.

8.3. To set-up a comprehensive repository in NTIPRIT for disseminating telecom field related information, standards, benchmarks, resources, program curriculum, etc.

8.4. To develop other training institutes under Department of Telecommunications and its organisations as national level telecom schools of excellence for imparting training to Government/ PSU officials and other stakeholders.

8.5. To promote and augment vocational and non-formal training institutes in urban and rural areas to cater to the skill and training needs of telecom sector.

8.6. To encourage collaboration with premier educational institutes like IITs and telecom research organisations of excellence for directing research and development to field problems.

9. PUBLIC SECTOR

9.1. To recognise the ***strategic importance of Telecom PSUs*** in nurturing/enhancing Government's intervention capabilities in matters of national security or international importance, including execution of bilateral projects funded by Government of India.

9.2. Appropriately consider the restructuring of the Public Sector Undertakings, under the Department of Telecommunications, in terms of management, manpower and equity.

9.3. To ***encourage Public Sector Units under the DoT to identify and exploit strategic and operational synergies*** so that they play a significant role in service provision, infrastructure creation, and manufacturing.

9.4. To exploit individual strengths of organisations under DoT/DIT to their mutual benefit for ensuring these organisations to effectively flourish in the competitive telecom market while adequately supporting the security needs of the nation. Efforts will be made for according preferential treatment for procurement of products and services rendered by individual organisations.

9.5. To recognise and enhance the opportunities available through/within Telecom PSUs for deployment of indigenously developed Telecom products, with Indian IPR, to provide vital support for domestic manufacturing of Indian Telecom products in the long run.

10. CLOUD SERVICES

10.1. To recognise that cloud computing will significantly speed up design and roll out of services, enable social networking and participative governance and e-Commerce on a scale which was not possible with traditional technology solutions.

10.2. To take new policy initiatives to ensure rapid expansion of new services and technologies at globally competitive prices by addressing the concerns of cloud users and other stakeholders including specific steps that need to be taken for lowering the cost of service delivery.

10.3. To identify areas where existing regulations may impose unnecessary burden and take consequential remedial steps in line with international best practices for propelling nation to emerge as a global leader in the development and provision of cloud services to benefit enterprises, consumers and Central and State Governments.

11. TELECOM ENTERPRISE DATA SERVICES, IPV 6 COMPLIANT NETWORKS AND FUTURE TECHNOLOGIES

11.1. To formulate appropriate policies in the area of enterprise and data services to fuel further growth of India's ICTE sector and attract investments.

11.2. To facilitate the role of new technologies in furthering public welfare and enhanced customer choices through affordable access and efficient service delivery. The emergence of new service formats such as ***Machine-to-Machine (M2M) communications*** (e.g. remotely operated irrigation pumps, smart grid etc.) represent tremendous opportunities, especially as their roll-out becomes more widespread.

11.3. To adopt best practices to address the issues (like encryption, privacy, network security, law enforcement assistance, inter-operability, preservation of cross-border data flows etc.) related to cloud services, M2M and other emerging technologies to promote a global market for India.

11.4. To recognize the importance of the new Internet Protocol IPv6 to start offering new IP based services on the new protocol and to encourage new and innovative IPv6 based applications in different sectors of the economy by enabling participatory approach of all stake holders.

11.5. To establish a dedicated centre of innovation to engage in R & D, specialized training, development of various applications in the field of IPv6. This will also be

responsible for support to various policies and standards development processes in close coordination with different international bodies.

12. FINANCING OF TELECOM SECTOR

12.1. To create a ***Telecom Finance Corporation*** as a vehicle to mobilize and channelize financing for telecom projects in order to facilitate investment in the telecom sector.

12.2. To endeavor to include telecom sector projects within the ambit of financing from existing entities.

12.3. To ***rationalise taxes, duties and levies affecting the sector and work towards providing a stable fiscal regime*** to stimulate investments and making services more affordable.

13. ROLE OF REGULATOR, CHANGES IN LEGISLATION

13.1. To review the TRAI Act with a view to addressing regulatory inadequacies/ impediments in effective discharge of its functions.

13.2. To undertake a comprehensive review of Indian Telegraph Act and its rules and other allied legislations with a view to making them consistent with and in furtherance of the above policy objectives.

13.3. To take requisite steps to strengthen various units of DoT as may be necessary to carry out functions required to achieve the objectives of this policy.

14. OPERATIONALISATION OF THE POLICY

14.1 To take suitable facilitatory measures to encourage existing service providers to rapidly migrate to the new regime in a uniformly liberalised environment with a level playing field.

14.2 Policy will be operationalized by bringing out detailed guidelines, as may be considered appropriate, from time to time.

The primary objective of NTP-2012 is maximizing public good by making available affordable, reliable and secure telecommunication and broadband services across the entire country. The main thrust of the Policy is on the multiplier effect and transformational impact of such services on the overall economy. It recognizes the role of such services in furthering the national development agenda while enhancing equity and inclusiveness. Availability of affordable and effective communications for the citizens is at the core of the vision and goal of the National Telecom Policy – 2012. NTP-2012 also recognizes the predominant role of the private sector in this field and the consequent policy imperative of ensuring continued viability of service providers in a competitive environment. Pursuant to NTP-2012, these principles would guide decisions needed to strike a balance between the interests of users/ consumers, service providers and government revenue.

ANNEXURE – IV

GOVERNMENT OF ORISSA

The ICT Policy, 2004

Contents

INFORMATION TECHNOLOGY DEPARTMENT

G.O No. 340 / IT Dated 10.2.2004
IT-A-04/2004

1. VISION

The Government of Orissa will strive to develop a well planned, robust and futuristic IT architecture in the State which will bring about positive changes in all walks of life and society, resulting in ease and convenience in transaction, augmenting employment opportunities to the educated youth and ushering higher economic growth in a definite time frame. Government will help IT reach the common citizen so as to narrow down the Digital Divide. Widespread applications of IT would establish a system where the citizens will receive good governance ensuring speed of decisions from a transparent Government through an effective e-Governance System. It will offer a hassle free, business friendly environment to the ICT entrepreneurs by framing an attractive policy package and financial incentives. It will be the endeavour to attract investments from outside into the State. A detailed document on the IT Vision of the State is available at http://www.utkal.ernet.in/itvision

2. OBJECTIVES

The Policy will provide:

- Inexpensive access to Information
- Transparency in governance practice
- Door step delivery of host of services
- Increased employment
- High export turnover and economic growth

3. AGENCIES

- **State Information Technology Services Board** (SITSB) has been constituted to oversee the ICT sector in the State. This is the apex policy making body.
- **Department of Information Technology** will be the administrative department in Government of Orissa in the matters of IT, ITES and Communication.
- **Orissa Computer Application Centre** (OCAC) has been designated as the Directorate of the Information Technology Department. It will coordinate and implement the ICT Policy and power the growth of IT in Government and semi-government sectors.
- **Software Technology Parks of India (STPI), Bhubaneswar** under the Ministry of Information Technology and Communication, Government of India is responsible for promotion of Export Oriented IT Units in the State.

4. STRATEGIES

4.1 E-Governance

4.1.1 **E-readiness in Government**

Government is convinced that the gap between the rich and the poor, between the more developed and the less developed, between the urban and rural population can be bridged by empowering the less privileged sections of society by providing equality of opportunity to access information and services. To this end, Government procedures in all Departments shall be re-engineered to use the ICT tools for attaining speed, transparency and effectiveness in implementing Government decisions and reaching them to the people. All the Departments and important administrative set-ups of the Government shall be connected to the Secretariat Local Area Network (LAN). Computerisation of District and field level offices of all Departments shall be taken up expeditiously.

Departments connected with important public services and utilities shall be automated in their functioning and suitable public interface will be designed to provide the services.

4.1.2 **Access to Information**

Government information such as various Cabinet Decisions, Forms, Procedures, Programs, Projects, Schemes, Tenders, Quotation Calls, Notice etc will be displayed in the State Portal for reference and use by the public. Designated Information Officers in individual Departments and offices shall be responsible to provide all information needs to the Government and public.

4.1.3 **Citizen Services**

Various citizen services such as Payment of Utility Bills like Electricity Bills, Water & Sewerage Bills, Telephone Bills, Holding Tax, Filing CST Returns, Exam Fees for School Final, Exam Fees for JEEs, Filing IT Returns, Registration of birth and death and getting related certificates, getting various permits and licenses, downloading of Forms and Government Orders etc will be designed to be made available to the public through State Government Portal. These services will be available to the public from the information kiosks.

4.2 Human Resource Development

4.2.1 **E-Literacy**

(i). All employees in the Government will be trained on different aspects of computer usage and its applications. The existing in-house capacities available with the Information Technology Department will be suitably augmented by outsourcing the service.

(ii). Recruitment Rules in the Government will be suitably amended to ensure that future appointments in the Government will require a minimum entry level of knowledge on computer applications.

(iii). Government employees will be permitted to take up courses on skill development in the IT related fields leading to award of Diplomas and

Degrees from recognized educational / training institutions. Respective Departments will reimburse course fees paid by the employee after passing qualifying examinations and on production of relevant certificates to the authorities.

(iv). Computer Centres and Kiosks will be extended to the village level users. Wherever necessary, Village Panchayat offices will be equipped with a community computer and Internet connectivity. The village level users will be trained on various aspects of computer usage such as accessing the Internet, browsing the Government website and availing of e-Services provided by the Government from time to time.

(v). Use of local language interface in using computers and offering of e-Services through the State Government website will be made available to the users for convenience. Government will provide aides at selected access points to guide citizens with user convenience.

4.2.2 **Education & Training**

(i). **Computer Education at Schools**

Starting from the primary school level, all the school children in the State will be covered under computer training program through appropriate initiatives. The existing coverage of 400 schools will be suitably extended in the coming years. English would be in the school curricula from Class-I.

(ii). **Teachers' Training**

Training will be imparted to all school teachers on computer usage and IT applications and special training will be given to teachers-in-charge of computer education under multiple schemes. Regular training programs will be held for the teachers to keep their knowledge base at most current level.

(iii). **Networked Universities and Colleges**

All Universities and colleges in the State shall be connected through a Wide Area Network and with Internet connectivity. Student related services and facilities such as online education, career counseling, online selections and interviews etc can be made available through this network.

(iv). **Industry friendly curriculum**

Industry friendly curriculum will be devised for all kinds of IT education and training offered by institutions and training houses in the State in consultation with experts drawn from Industry and Academica. EDP will be included in the school and college curricula. This will ensure the compatibility of the young graduates and professionals to the requirement of industry and commerce for getting suitable jobs.

(v). **IT Manpower Planning**

Manpower is the lifeline for sustenance of IT activities in the State. Therefore, manpower planning for the IT sector shall be done on a continuous basis. Government will keep a tab on the existing capacities available with various technical institutions in the State on IT related subjects.

4.2.3 **Capacity Building**

Senior and middle level officers and executives will undergo necessary training programs organised through IT Department in the areas of their interest and intended applications. This will be organized through OCAC. Services of reputed training organisations in the private sector shall be outsourced to augment the existing capacities with Government. Junior executives and official staff shall be given adequate training on various office automation tools and procedures for use in their day-to-day job.

4.3 Infrastructure Building

4.3.1 More IT Parks will be established at suitable locations in the State, preferably in tier-II townships to disperse the IT development uniformly envisaging local area development. For this, private investments will be encouraged.

4.3.2 Data Centres will be developed at District levels, connecting offices of District Collectorates. Varieties of information and primary data related to the land and people such as income group, health and education status, land holding and usage, soil characteristics, weather reports, rainfall data, agricultural produce, business and commerce, consumption of commodities etc shall be stored in the computers of these data centres for future reference. Video Conferencing facility will be provided to all District Collectors so that the District Administration and State Secretariat can interact at all times. Vital information of the Government and important establishments may also be stored in a State level Disaster Recovery Centre in OCAC to safeguard them from possible damage or loss in case of any natural calamities.

4.3.3 **High Speed Data Corridors**

All important IT infrastructure such as the State Secretariat, Infocity, Fortune Tower, District Data Centres etc will be linked through broad band connectivity for sharing common server space wherever necessary. All major Internet Service Providers, National Long Distance Operators and International Long Distance Operators will be encouraged to set up their point of Presence (POP) for providing readily available connectivity to the IT units.

4.3.4 **Networking**

The Secretariat LAN will be connected to a Statewide Wide Area Network with adequate connectivity through an Optical Fibre Cable back bone at

District level and VSAT links at Block level, for information interchange with District and Block Level offices. Video conferencing facilities will be provided between the State and District administration.

4.3.5 **Information Kiosks**

Four thousand Information Kiosks will be set up through self-employment scheme in suitable urban and semi-urban locations in the first phase to offer access to Government information portal and citizen services. Government will provide suitable incentives and free training for this important IT infrastructure in the private sector. A number of e-services targeted for citizens' use will keep these kiosks commercially viable.

4.3.6 **City Infrastructure**

Adequate civic amenities like high quality accommodation, high-class education, health care facilities, amusement parks, entertainment facilities, public gardens and lawns, playgrounds, swimming pools, food plazas, gymnasiums, auditoriums, mini stadiums, children parks etc shall be created in the State Capital and in tier-II townships. This will create a rich ambience required for the growth and concentration of IT activities. All Government Departments will be obliged to allocate 3% of their Annual Budget under the head 'IT Budget' for procurement of hardware and software and 5% for building up the IT infrastructure by their own initiative or in conjunction with combined budget allocation of two or more Departments.

4.3.7 **Communication Infrastructure**

(i). Orissa Statewide Wide Area Network (OSWAN) will be implemented connecting the Secretariat to the District Head Quarters through broad band connectivity and from district to blocks through minimum 64 kbps data link. Additional connectivity to the blocks will be available through a VSAT network.

(ii). Government will encourage National Long Distance Operators (NLDOs) for building up a robust fibre optic network in the State connecting District Head Quarters and major towns.

(iii). Free Right of Way will be granted by IT Department to ISPs and NLDOs for laying of their cables in the State against negotiated/agreed upon band width and allied services to Government for use in the Government Network.

(iv). Government will encourage private participation for setting up international Fibre Landing Station at Paradip or Gopalpur Port to make connectivity abundantly available.

4.3.8 **IT for Health Sector**

(a). Telemedicine facility will be expanded to all hospitals up to the level of Public Health Centres located in the Block level.

(b). All District hospitals and the Medical Colleges in the State will be connected through a Wide Area Network / Video conferencing Network for information interchange and skill sharing.

4.4 **Technology Support**

4.4.1 Strategic Alliances with Technology leaders like Microsoft, Oracle, Sun Micro Systems, IBM etc shall be encouraged in the Government and private sector. Officers of various Government Departments shall be trained with skill levels and domain knowledge related to their responsibilities.

4.4.2 Initiatives will be taken to establish national level institutes in areas like e-governance, e-commerce, networking, multimedia and animation.

4.5 **Community Building**

4.5.1 Industry Associations

Government of Orissa shall interact regularly with industry associations like NASSCOM and CII and various Chambers of Commerce and Industry and Industry Associations for sharing and forming views and opinions.

4.5.2 An IT Think-Tank has been informally constituted with members and participants from local IT industry, Academia and IT users with encouragement from the Government in IT Department. This group meets to discuss on various policy issues and gives advisory feed backs.

4.5.3 CIOs' Forum is the formal body of Chief Information Officers of the Departments and Institutions of the State Government, constituting Secretaries/ CEO's of Departments and Organisations as members who are the content owners of the State Portal. Secretary, Information Technology Department is the Chairman of the Forum. Information content of Government web pages and their updation are being effected through regular interaction in the Forum.

5. **GOVERNMENT INCENTIVES**

5.1. Incentives those are available automatically:

5.1.1 IT and ITES units are declared as Public Utility Services under the provisions of the Industrial Disputes Act, 1947. They are allowed to work in three shifts as continuous processing units.

5.1.2 IT / ITES units are exempted from the clearance and routine inspections of the controlling and regulatory authorities of the State Government such as Labour Commissioner, Director of Employment, State Pollution Control Board, Inspectorate of Factories & Boilers and are eligible for self

certification to the Labour, ESI and EPF Authorities under the Provisions of the following Central and State Government Acts,

The Factories Act, 1948

Contract Labour (Regulation & Abolition) Act, 1970

Employees' State Insurance Act, 1948

Employment Exchanges (Compulsory Notification of Vacancies) Act, 1959

Industrial Employment (Standing Orders) Act, 1946

Maternity Benefit Act, 1961

Minimum Wages Act, 1948

Payment of Wages Act, 1936

Orissa Shops & Establishments Act, 1946

Equal Remunerations Act, 1976

Employees Provident Fund & Miscellaneous Provision Act, 1952

5.1.3 All IT / ITES industries will be exempted from the payment of Sales Tax for a period of five years from the date of their first billing.

5.1.4 Important IT building infrastructure such as IT Parks, STPI Complex shall be free from power cuts.

5.1.5 IT/ITES units will be exempted from the payment of electricity duty as per the provisions of Industrial Policy of the Government.

5.1.6 IT/ITES units will be exempted from clearance from Electrical Inspector for approving Contract Demand of Load and appliances to be fitted in an IT unit.

5.2 **Incentives that are available on application :**

5.2.1 **Facilitation of ICT Industries -**

A combined application form to obtain clearances would be developed to centralize statutory / non-statutory clearances and time bound clearances with provision of deemed clearances would be created for ICT industries. OCAC will be the nodal agency which will be the single window facilitator. In this regard details will be developed after formulation of Orissa Industries Facilitation Act.

5.2.2 **Interest Subsidy on Loans from Financial Institutions / Banks**

New units in IT / ITES sector will be entitled to interest subsidy @5% per annum for a period of five years from the date of commercial production subject to a maximum of Rs.20 lakhs, on term loans availed from recognized Financial Institutions / Banks in the same manner available to industrial units under Industrial Policy of Orissa, 2001.

5.2.3 **Energy charges at Industrial Tariff for IT / ITES units**

Electrical energy consumption by IT / ITES units shall be charged at industrial rate subject to approval of OERC.

5.2.4 **Stamp duty Exemption**

No stamp duty will be charged on land allotted by Government to IT / ITES units.

5.2.5 **Mega Projects**

Special package of concessions will be offered to Mega IT Projects involving project cost of Rs.10 Crores and above providing employment opportunities to more than 500 persons within a period of two years. In providing such employment, the low end IT jobs such as data entry operators shall be filled up from local candidates.

5.2.6 **Price preference** of 10% will be available to local IT units participating in the e-Governance projects of the State Government.

6. **ROLE OF OCAC**

Orissa Computer Application Centre will continue its role as the agency for computerization of the Government. In addition it will function as the

Directorate for Information Technology in the State. Following major functions will be looked after by OCAC :

(i). Involve, co-ordinate and participate in the Computerisation of all Departments in the Government.

(ii). Provide, organize, outsource and co-ordinate training to new users of computer hardware and software and upgrade the skill level of existing users in the Government, entrepreneurs of identified schemes, teachers and trainers. Necessary funds will be provided by Departments' budget.

(iii). Prepare documents, programs and campaigns to increase the visibility of the State as a Destination of Choice for IT investments from investors.

(iv). Design, host and maintain websites of Government Departments, organizations and institutions and necessary software packages as and when requested.

(v). Design, host and maintain the official Information Portal of the Government.

(vi). Implement, co-ordinate and monitor all Schemes of the State Government in the Information Technology Department pertaining to Information Technology, IT Enabled Services and Communication sector.

(vii). Consult, process, procure and maintain hardware and software resources of all Departments in the Government.

(viii). Plan, and formulate various strategies, visions, policies and projects for the Government to achieve success in its mission to reach the benefits of Information Technology to the people. It will explore these whenever possible on the public private partnership.

(ix). Plan, invest, execute projects to build up adequate IT Infrastructure in the State on the basis of Build-Operate-Transfer(BOT), Build-Own-Operate-Transfer(BOOT) and Build-Own-Operate(BOO).

(x). Outsource technologies and IT services not available in the State and work back to assimilate, absorb and develop the technology for the same in the State.

(xi). Collaborate with Technology Leaders to bring in new technologies to increase the local skill level.

(xii). Promote and establish Institutions of Excellence in the State in the IT, ITES and Communication sector to create world-class facilities for training and education.

7. ITES POLICY

7.1 A range of services including Customer Interaction Services, Financial and Accounting Services, Accounting / Data Entry / Data Conversion, Transcription / Translation / Localization Services, Web Site Services (Content Development, Animation), GIS, Engineering and Design, HR Services, Remote Education / Data Search, Integration and Management / Market Research, Consultancy and Management / Network Consultancy and Management etc. have been identified as IT enabled services (ITES). This sector has the potential of uplifting the SME sector in the State with plentiful employment opportunities.

7.2 Orientation

7.2.1 The State has a sizeable English knowing population with a sound work culture. It has around 38 Engineering Colleges, 42 MCA Institutions and 15 Institutions offering MBA Degree. Added to it, there are over 400 colleges running under six universities producing over a lakh of graduates. Both IT professionals and other graduates with good English and communication skill are assets for the ITES industry. Interaction with international clients and customers is the mainstay of ITES industry. Training facilities will be created for imparting good English education in the State. The existing English language curriculum followed in the

primary, secondary and higher secondary school syllabi shall be reviewed and Spoken English will be introduced from the High School level.

7.2.2 IT Literacy Program in Schools/Colleges

It is necessary that IT education be introduced right from the primary school level. This establishes the required level of familiarity of job-seekers and makes them employable with the minimum educational background of school final.

7.2.3 Knowledge on general maintenance and repair of IT Hardware and overall knowledge on networking shall be introduced to students at school level.

7.2.4 Courses on ITES related topics shall be introduced in selected graduate colleges for turning out readily employable manpower in local ITES units.

7.3 **Training**

7.3.1 Most ITES activities involve customer interaction services. Therefore training facilities on e-CRM will be made available in the State from experts in the field.

7.3.1 Training on e-Commerce activities including Sales and Purchases through Internet, Transaction processing, Security issues, web services shall be made available through Government agencies.

7.3.2 Training will be provided free of cost to the entrepreneurs selected for Information Kiosks and BPO Complex units under self employment schemes.

7.4 **Infrastructure**

7.4.1 Fortune Tower, an important IT building Infrastructure constructed by IDCO at Chandrasekharpur, Bhubaneswar offers about 3 lakh square feet of ready-to-occupy space with all IT infrastructure for new IT units and for expansion programs of large IT/ITES companies of the country.

7.4.2 An IT incubator facility namely, BPO Complex is under implementation on the available IT building infrastructure at Bhubaneswar, for providing help to existing BPO units in SME sector. Floor space of about 15,000 square feet would be made available to ITES units under SME category.

7.4.3 Adequate connectivity for voice and data transmission shall be provided through STPI, BSNL, VSNL and other local ISPs to the ITES units.

7.4.4 For ITES activities to spread into length and breadth of the State, infrastructure development will be undertaken in the Tier-II townships.

7.5 **Policy Incentives**

7.5.1 All incentives available to IT industries are available to ITES units.

7.5.2 No rent will be charged for space for 3 years to SME units in the BPO Complex set up by Government.

7.5.3 Annual Cash Incentive to ITES units having minimum 128 Kbps data / voice connectivity will be given for creation of more than 50 seats and at least 50% turnover from export market shall be eligible for this incentive.

8. **Miscellaneous**

(a). This policy shall remain in force until 5 years or until substituted by another policy, whichever is earlier. The State Government may at any time amend any provision of this policy.

(b). Doubts relating to interpretation of any term and / or dispute relating to the operation of any provision under this policy shall have to be referred to the Department of Information Technology, Government of Orissa for clarification / resolution and the decision of Government in this regard shall be final and binding on all concerned.

(c). Implementation of various provisions covering the incentives, concessions etc. will be subject to the issue of detailed guidelines / statutory notifications, wherever necessary in respect of each item by the concerned Administrative Department.

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A Synopsis
ICT and its Impact on Women: A Study in Two Districts of Odisha

Synopsis of Thesis submitted to the University of Hyderabad in partial fulfillment of the requirement for the award of the degree of

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SCHOOL OF SOCIAL SCIENCES

UNIVERSITY OF HYDERABAD

HYDERABAD- 500046

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A Synopsis

ICT and its Impact on Women: A Study in Two Districts of Odisha

Seema Mahapatra

ICT's[1] have become a very important aspect for the development of a nation and a clear definition of ICT needs to be understood before going to the depths of the concept and its impact on women. Dalal (2006:1) says that, "Information and Communication Technology comprise a complex and heterogeneous set of goods, applications and services used to produce, process, distribute and transform information"[2]. Dalal's definition of ICT clearly says that the distribution of information in a effective manner is the main goal of ICT.

All around the world, ICT is being used as an effective tool for the development of the economy, enhancing the performance of the government, developing human resources and spreading of data and resources at a rate which would have been unimaginable in the earlier societies. ICT helps in bringing people of different sectors and zones together and drastically improving the level of connection and contact between individuals and societies to a great extent. The scientific revolution in the form of Information and Communication Technology has brought about new ways of people communicating to each other, new ways in conducting business, modes of recreations and has created a vast area of social network. Today, in the so called modern world it is almost impossible to live life without the help of technology. Yesterday's luxury has become today's daily necessities. The aspirations of the modern societies all around the world are growing more and more. Development and progress are expected to advance the quality of everyday life in the sphere of material as well as political conditions of every individual. . As such technology is integral to any modern day private or public life. ICT being an important medium, its scope remains unmeasured and holds enormous potential for further exploitation of ICT's towards the betterment of human future.

[1] ICT stands for Information Communication Technology.
[2]Available online on: [http://unpan1.un.org/intradoc/groups/public/documents/APCITY/UNPAN029838.pdf] [Accessed on 18th November, 2009].

Due to advent of globalisation, the Indian economy has been suddenly growing at a very high speed. Due to the development that has occurred in the field of Information Technology, it has facilitated a global communications network that spreads across national boundaries and also has an impact on public policy, attitudes and behaviour of individuals, especially of children and young adults. Information technology has now been on the national agenda and many states, namely, Tamil Nadu, Meghalaya, Odisha, Punjab, Goa, Gujarat, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Rajasthan, Sikkim, Uttar Pradesh, West Bengal, Pondicherry etc. across the country have announced the policies to use ICT as a mechanism for better governance, providing services, sustainable development, globalisation of the economy, social empowerment, education and various other fields of life.

India being a democratic country, everyone is free to access information and in this regard information becomes a key to democracy because without information, transparency will be absent and thus making the country undemocratic. Today a common man can access global information with the help of ICT.

There are a huge group of workingwomen in India who hail from the rural and unorganized sectors. Majority of the Indian women are traditional in nature and are in a marginalised position. There exists a wide range of inequality when it comes to women's access and participation in all the communications systems, especially the media and there is also a lack of mobilization to promote women's contribution to society even in the present day scenario. The media has the capacity or potential to make far reaching contributions to the development of women. ICT's can create favourable and soothing environments that will be able to extend communication and accessibility infrastructure to women[3]. More women are involved in opting for careers in the communications sector, but only a few are becoming successful enough to climb the ladders of success and reach the decision-making level or serve on governing boards and bodies that influence media policy. The lack of gender sensitivity in the media is very clearly visible by the inability to do away with the gender-based stereotyping that can be found not only in the public and private media domain but also the local, national and international media organizations[4]. The unrelenting projection of negative and degrading images of women in media needs to be changed. The print and

[3] Available online on:[http://www.ifuw.org/seminars/2007/jain.pdf(Accessed on 8th October 2010)].
[4] Ibid.

electronic media should provide a unprejudiced picture of women's varied lives and their far-reaching contributions to the society in the present day changing world.

Emergence of ICT on the national agenda and due to the announcement of various ICT policies by several state governments has to a great extent added to the strength of India's position in the present day software obsessed ICT sectors in the world.

The state of Odisha declares its objectives to promote ICT in the policy of the ICT 2004. The state government commits itself for the provision of: reasonably priced access to information, transparency in government practise, easy delivery of multitude of services, increase in employment and high export turn over and economic growth. The objectives will be worked out through certain agencies like State Information Technology Services Board, Department of Information and Technology, Odisha Computer Application Centre, Software Technology Parks of India. The government will also impart teaching in information and technology in schools and also impart special training to the teachers. These are some of the policy features of the government of Orissa with regard to ICT[5]. However, these are recent developments and there is not much of an account of their outreach and impact. There is also not much of an account of its outreach to the women in particular and the difficulties that these modern edifices face in the form of cultural barriers when it comes to reaching out to the women folk.

STATEMENT OF THE PROBLEM

This study is significant as there has been no work done on women and ICT in the state of Odisha. Miller (2000), says that on the one hand women and girls have been exposed to a great deal of marginalisation and discrimination in the various fields like education, health, economic independence and social services access throughout the world, but on the other hand women's input to the economy is high. These economic activities include employment in both the formal sector as well as the informal sector, self-employment in farming, trading and crafts production etc. There are several possibilities for ICTs to improve women's economic activities in the field of trade, governance, education, health and the like as well. ICT's bring huge opportunities to women in the work places and small businesses as well.

[5] Available online on:[http://www.orissa.gov.in/information technology/ICT%20 Policy.pdf (Accessed on 5th September 2010)] .

Women are the equal shareholders to the rewards offered by technology, and the products and processes, which are outcome of the technology use. However, it should not be confined to elite group of society but should reach the other segments of women in Indian society equally as well. It is very significant to know about the available social, economical and educational infrastructures available to diverse segments of the women and the social freedom and opportunities in both rural as well as urban areas.

RESEARCH QUESTIONS

1. What is the role played by ICTs in the lives of women in rural and urban areas towards socio-economic awareness and empowerment?
2. What is the extent of digital divide existing between rural and urban women due to differential provisioning and forms of patriarchy in both the regions?

OBJECTIVES OF THE STUDY

1. To study and analyse the concept of Information and Communication Technology, its origin, objectives and roles.

2. To critically analyse and review the policy issues of Information and Communication Technology in bridging the digital divide and empowering rural and urban women.

3. To study and understand the use of ICTs by rural and urban women in Khurda and Ganjam District.

4. To study the impact of ICTs on the socio-economic upliftment of women in supporting their livelihood needs thereby giving them a voice in the society.

5. To find out the extent to which the ICTs space is engendered. Since, gender falls under the category of exclusion and ICT can play an inclusive role to reduce this

exclusion to a certain extent, the process of exclusion and the inclusive measures of ICT needs to be studied.

RATIONALE FOR CHOOSING THE FIELD

Odisha, the ninth largest state of India is one of the most backward states amongst the non special states[6]. The total population of Odisha is 41,947,358. The total literacy rate of Odisha is 73.45% and the female literacy rate is 64.36% to that of 82.40% for males. It ranks the last in the economic development among the fifteen non-special states[7] .The government of Odisha has come up with the ICT policy in the year 2004, acknowledging the importance of ICT as a tool for massive development in the state of Odisha. The policy has an image to reduce the digital divide which will bring about a constructive change in all walks of life and society, resulting in ease and convenience in transaction, providing employment opportunities to the educated youth and ushering higher economic growth in a specific time frame. Hence, it becomes important to study the impact of the policy which has been implemented by the government of Odisha.

Odisha Computer Application Centre(OCAC) in Bhubaneswar and Information Resource Management Association- India(IRMA- India) in Bhubaneswar are the two organisations that have been selected for the study. In order to look at the work done by IRMA- India in the rural villages by the establishment of Community Information Centres, Badhinuapalli and Kanheipur CIC of Khalikote block, Ganjam district was chosen. Badhinuapalli CIC covers 12 villages and 3 Gram Panchayats namely, (a) Badhinuapalli Gram Panchayat covering 10 villages, (b) Bikrampur Gram Panchayat covering 8 villages and (c) Tulasipur Gram Panchayat covering 4 villages.

Kanheipur CIC covers 10 villages and 2 Gram Panchayats namely, (a) Kanheipur Gram Panchayat covering 9 villages and (b) Kairasi Gram Panchayat covering 1 village. These 2 CICs were selected because IRMA- India established a pilot project in Badhinuapalli and Kanheipur village of Khalikote block, Ganjam district which is the first of its kind in Odisha.

[6] Non-special states are those who do not get special benefits like higher share in the Union Governments resource allocation, excise duty concessions and the like. Available online on: [http://www.business-standard.com/article/economy-policy/what-a-special-category-state-means-113031900031_1.html] [Accessed on 20th June, 2013].

[7] Available online on[http://censusindia.gov.in/2011-prov-results/data_files/orissa/Provisional%20Population%20Total%20Orissa-Book.pdf] [Accessed on 13th June,2013].

Bhubaneswar has been selected as the study site as it is the capital city of Odisha which makes it the hub of companies, ICT institutions etc. and people from all over the state come to Bhubaneswar for job opportunities which makes it all the more convenient to find respondents belonging to varied sections, regions and background making the data more relevant and useful. Nayapalli-6 area of Bhubaneswar was selected to study the urban respondents. This area of Bhubaneswar was chosen because it is located within 2kms radius distance from OCAC office. It is a flourishing area with a mixed population which consists of both residential as well as commercial occupants.

This proposed study aims at understanding the impact of ICT on women in general, as there has been no study on this area especially in the state of Odisha which is the most backward state. In the new world of science and technological advancement where every nation and state is striving for a higher economic growth the flow of information is vital. Thus harnessing the benefits of the ICT for the growth and development of women who are half the population of the world will be of immense help in bringing women in par with men. This proposed research work also will open up more areas for further research in relation to women and technology.

RESEARCH METHODOLOGY

This study is structured in such a way that both secondary and primary sources of data collection have been used. For secondary data, the study is based on books, articles in refereed journals, reports prepared by different organisations as well as government reports and policies and other published works have been referred. For primary data, a field work has been carried out using a structured questionnaire and by interview method with the help of an interview schedule. Two different sets of questionnaires were designed for the women respondents and the organisation staff. They included both open ended and closed ended questions. Both qualitative and quantitative tools of data collection were used.

IRMA- India has 19 staff members and all the 19 staff members were interviewed. Access to villages was made through CICs at Badhinuapalli and Kanheipur. 100 rural women were interviewed and the respondents were accessed using Snowball Sampling Technique representing the number of villages. OCAC has 59 staff members and 30 staff were interviewed using Snowball Sampling Technique. Nayapalli-6 area was identified for data

collection. Simple Random Sampling was used for selection of the respondents. Every 8th house of 550 houses was approached. The details of the Nayapalli-6 area were found from the Nayapalli Association office. It consists of a total of 558 plots out of which 16 are D- type plots. There are 11 streets and 5 lanes. Out of the total 558 plots, 550 are residential houses. There are many commercial plots, hostels, shops, internet- cafe's, banks, temples, ATM's, computer training institutes, market complex, etc.. A total of 70 respondents were interviewed and data was collected. The data was entered using SPSS Software and then analysed.

In order to strengthen the research four Case Studies were also carried out. 2 women, 1 each from Badhinuapalli village and Kaheipur were identified for the Case Studies. 2 women respondents from the N- 6 area of Bhubaneswar were also selected for the Case Study.

CHAPTERISATION

This study is organised into six chapters. The first or the "**Introductory**" chapter discusses about the concept of Information and Communication Technology and the general impact of Information Communication Technology (ICT) all around the world which is being used as an effective tool for the growth of the economy. The chapter then discusses the importance of ICT as a mechanism for better governance in India as a result of which many states across the country have announced ICT policies so that India's position can be strengthened in the software-led ICT sector in the world. This chapter also talks about the role of Odisha government through its ICT Policy of 2004 to provide opportunities to the people of Odisha in accessing technology. This chapter also includes a detailed yet selective review of literature which focuses on the role and impact of ICT on women and thereby highlights on various studies supporting the inclusive role played by ICT. The research questions, objectives and research methodology have also been outlined.

Chapter two, "**ICT, Gender and Exclusion: A Conceptual Understanding**", introduces the concept of ICT, Gender and Exclusion and how these three concepts can be linked together because gender falls under the category of exclusion and ICT can play an inclusive role to reduce this exclusion to a certain extent . Apart from citing various definitions by various scholars on the concepts, this chapter will also bring more clarity on the roles and functions thereby providing a general understanding of the concepts.

The third chapter, "**Feminism and Women Empowerment**" highlights on the concept of Feminism and Women Empowerment and tries to discuss as to how feminists talk of empowering women.

The fourth chapter, "**Policies and Programmes on ICT: An Overview**" is a review of the New Telecom Policy, 2012 and Odisha State ICT Policy, 2004. The chapter looks at the constitutional provisions and steps taken by the government for the welfare of the women folk through the introduction of ICT institutions and provision of various ICT-related facilities and bridging the digital divide. This chapter also highlights the details of the two organisations OCAC and IRMA- India which have been identified for carrying out the study.

The fifth chapter**,** "**Experiences from the field**", will study and analyse the data collected. It deals with the study area and also highlights the socio-economic background of the respondents and their use of ICTs in their day- to- day life at home and at work. This chapter also deals with the socio-economic background of women in general in India and Odisha in particular. It then focuses on the impact of ICT in making the women independent economically as well as in bringing a drastic change in their social life as well. The field study gives a clear scenario regarding the socio-economic status of women through the help of ICT in Odisha. Since gender equity has not been achieved even in this twenty-first century and women still continue to be one of the most vulnerable sections of the society, so their socio-economic status has to be improved in order to empower them to certain extent. ICT plays an important and constructive role in doing so. Hence, the impact of ICT and its impact on women has been thoroughly dealt in this chapter.

The sixth and the "**Concluding**" chapter recapitulates the themes of the first six chapters of the research work coupled with the researcher's assessments and arguments.

STUDY FINDINGS

(1) The study finds out that urban women (N-6 of Bhubaneswar) have easy access to ICT mediums and more familiar in making use of it.

(2) T.V. and mobile phones are the most common ICT mediums being used in rural areas according to the present research.

(3) In the urban areas, apart from T.V. and mobile phones; newspapers, magazines and computers are also used.

(4) The use of A.I.R. or Prasar Bharati has reduced drastically in both rural as well as urban areas. Most people use F.M. radio instead of All India Radio.

(5) Women in nuclear families tend to have more freedom in terms of making use of their time and resources.

(6) The rural people, especially women have tremendous skills and potentials; provided that they are supported and allowed to demonstrate their skills.

(7) Many housewives, from the urban areas expressed regret of losing out on the scope to build their careers given their qualifications because of other priorities and lack of support.

(8) There is a need to appoint more female staff to which in the field, so that the women can be more open in expressing their views and feelings.

(9) In some ways, ICT has helped many women to skirt various social restrictions and reach out to information resources, opportunities and networks there by enabling them to pursue internet and aspirations.

(10) The CIC's has become an integral part of the village .Beside being involved in various aspects of the village – public and economic; they also have acquired a sense of belongingness, ownership among the villagers by employing the local youths.

(11) With time, the CIC's are not only a place for getting information but also a social space available to the villagers to meet and socialize and discuss their everyday issues.

(12) The participation and attendance of women in the awareness campaigns being organized by both OCAC and IRMA is regular but limited. The reasons broadly being-shy nature, dominant male voice, work pressure, social restrictions etc..

(13) Women take more interest in daily soaps, mythological serials, agricultural and health related programs and news mostly in local languages.

(14) Many respondents mentioned especially of being benefitted from health related advertisement on T.V.

(15) Women viewed ICT as an alien and masculine space not meant for them. However, through the inclusive measures taken up by these organizations (OCAC and IRMA), they are opening up to acquaint themselves with ICT's concerning such activities as deemed suitable under the set paradigms of patriarchy.

(16) Many women respondents did not identify themselves as active user of ICT's and its prospects. Because, they did not view ICTs as in sync with their traditional roles like

housekeeping, innumerable religious rituals etc. This role set is reinforced in them through various expectations and models of ideal conduct prevalent among them.

(17) The research finds out that IRMA and OCAC do not discriminate anyone on the basis of caste, but the majority respondents belonged to the general caste, both in rural as well as urban areas.

(18) It was also noticed that the lower caste people usually sits at a distance from the higher caste people while attending any gathering or awareness campaigns. The notion of purity and pollution is deeply engrained in the Indian society. Gupta (2005), says that India is one of the most stratified societies in the world. There are not only income disparities but also disparities on the basis of religions, caste, communities, etc. Kapur et al (2010), in their study on the Dalits in Uttar Pradesh are of the view that social obligation sometimes acts as a condition responsible for the presence of a Dalit in social gatherings inspite of the humiliation faced by them. This holds true to a certain extent because the Dalits of Badhinuapalli and Kanheipur Gram Panchayat come to the awareness campaigns at the motivation and encouragement of the CIC staff members but deep inside they have a feeling of purity and pollution which holds them from sharing the same space alongside the non-dalits.

(19) The women also sit separately from men while attending any gathering or awareness campaigns.

(20) The Odisha State ICT Policy, 2004 as well as the New Telecom Policy,2012 are more technical and do not have any separate clause which would ensure full participation of people in both rural as well as urban areas, especially women.

(21) Women who have become economically independent by the joint ventures of the CIC's with the SHG's have become confident and have also admitted that there has been a rise in their self-respect.

(22) Badhinuapalli and Kanheipur CIC's are the first CIC's to be established in rural areas in Odisha. It is the first of its kind.

(23) Geographical location of the CIC's was also one of the reasons why the participation of women was quite less in the awareness campaigns. The CIC's were located in Badhinuapalli and Kanheipur and they cover 12 villages and 10 villages respectively. So, women from other villages were not frequent in visiting the CIC's office. Their mobility was restricted because of their dependence on the family members going from one place to another, bad roads especially during rainy season, wok pressure, etc.

According to Kabeer (2006), the discriminated groups are more likely to fall under the clutches of poverty and suggested that gender constitutes a specific form of clear-cut disadvantage in conditions of poverty. It holds true in case of women in Odisha, especially rural women. Women who already fall under the excluded category have a higher chance to slide into poverty and deprivation because they belong to rural areas where access to modern infrastructure and better facilities are not at easy reach to these women. The standard of living of women from Kanheipur and Badhinuapalli Gram Panchayats are not so good in comparison to women from Bhubaneswar N/6 area. The standard of living impacts their way of thinking and understanding things. Because of their traditional settings and background with an additional disadvantage of patriarchy, they have remained aloof in a closed entity, very reluctant to open up or accept new ideas, new technologies, etc. The researcher faced problems in gaining entry to the society because of their shy nature and aloof attitude. In such a scenario, the question that ponders in the researcher's mind is that, whether ICT is only a masculine domain? Why do women remain distanced from ICT when it seems to be the easiest of all provisions available for them to enjoy various life chances, to gain knowledge and enhance their skills and become more competent for participation in public life.

ICT faces both provisional and cultural setback in India especially in rural areas. Besides suffering from deficiency of infrastructure, inventory, high end technology, finance, trained personnel, it also suffers from a weak policy backing. ICT projects in rural areas are mostly designed towards overall community(CICs) development. However, their approaches remain eclectic in identifying and addressing socio-economic issues separately and intensively to the end of elevation. The promotion of ICTs remains mostly in the areas of livelihood skills, health and hygiene and education and hence there is a need for more women-centric and women- friendly approaches. The use of ICTs by women is not yet common to public perception, especially in rural areas. Competition among private players and the presence of head quarters of the state agencies make availability of ICTs much more abundant in urban area. In an urban area, the idea of women using public space is more acceptable and on an average, women are more exposed to ICTs and its different uses than a rural counterpart. Recently, women are increasingly allowed to access ICTs especially to learn skills or make career to earn in the urban areas. However, the reason for access is primarily derived from needs and benefits to family than personal needs. Personal needs and ambitions are recognised by women as reasons for pursuing ICTs more so in urban areas.

However, the scope to engage with it in any meaningful way is guarded by and dependent on the family as much as for the rural women.

There is a visible increase in the status of women in terms of their status in family, economic independence, awareness and aspirations. However, these are mostly celebrated as success of the family itself and not so much of the individual women. Both in rural and urban areas women described their own success with ICTs in terms of their contribution to their family's economic and social upliftment. They expressed pleasure over their increased status, respect and voice within the family and their change in status outside the domestic sphere appears secondary in their narrative. This sense of derived need of women's access to ICTs does not signify the optimum use of ICTs by and for women. ICT as a virtual medium is immensely women friendly. But on the other hand, its efficiency to reach out to each and every corner is held back culturally and physically is also equally huge and needs a lot of attention as well. ICT allows women to operate and achieve their ambitions without much challenge to the patriarchal norms(for example, safe official desk jobs, working from home, flexible timings)allows them to fulfil their traditional role expectations as well. Women rarely spoke of using ICT's in relation to their political rights and issues of liberties. ICT's is used as deemed fit under the set paradigms of patriarchy. To certain extent, ICT has enabled some of the Odia women to challenge the system of patriarchy quiet effectively, but the scope of potential use of ICT's or women empowerment remains sadly unexplored.

BARRIERS IN THE FIELD OF ICT

Women are still regarded as a minority when it comes to being the beneficiaries of the knowledge networking process. Women usually face imbalances in the ownership, control and regulation of these technologies. Since they face difficulties in harnessing the full potential offered by these technologies, they are also stopped from attaining the full benefits of the development. This is because of some of the generic reasons like low levels of literacy. Little access and control over economic resources, low decision-making, cultural restrictions and gender insensitive approaches to development. Apart from these reasons some other reasons are:-

(1) Awareness – ICT is fairly the new model of development and it requires a medium of sensitization and belief in the technology, a factor of time as well as willingness to

accept it. Hence, lack of awareness on the use and benefit of this medium acts as a barrier.

(2) Capability and Skills – Women, because of their low literacy levels and lack of access to the technical education are more disadvantaged and excluded from their male counterparts at receiving full benefits of the provisions being provided by ICT. The lower number of female staffs in IRMA and OCAC, suggest that a few women go for technical education. In this context Amartya Sen's Capability Approach holds true, where the focus is basically on what individuals are able to do or capable of doing. Every individual should have the freedom or capabilities to choose the life they want to lead. But women who have the capability to work but are not able to fulfill their goals and wishes because of various barriers, like economic, social and cultural are further pushed into Social Exclusion. Hence, exclusion and the concept of capability deprivation are very much related to one another.

(3) Issue of Access – ICT and its mediums come with a financial cost. Women in our country have a little control over the family income. Hence, they lack decision-making power in investing in these technologies. One of the respondent's husband said that, "I do not encourage my wife and children to watch T.V. and use telephone, because the telephone bill and electricity bill will go up, then who will pay. I don't have so much money. "

(4) Language Barriers – Most of the information present in computers are in English language. Hence, people especially form the rural areas who have no knowledge of English language or very little, find it quite difficult to use these mediums. Many of the women respondents, especially from the rural areas and who are slightly older in age had this problem.

(5) The staffs of both the organizations expressed their difficulty in working with women in terms of lack of projects, funds and policy provisions,

(6) The unavailability of trained project and managerial staff sometimes acts as a barrier in the proper functioning of the activities of the organizations.

(7) Occasional Maoist threats also creates problem in rural areas.

(8) Mobilization of people in rural areas, especially women is a problem (viewed by the staff of IRMA&OCAC).

ISSUES THAT NEEDS A CRITICAL LOOK

(1) The participation of women at the grass-root level is important, but their role in decision-making has been limited.

(2) There is a need for changing the stereotype roles for women. The views between communities living in different geographical locations will lead to cross-culture interaction of views, exchange of ideas and opinions.

(3) Participation of women from backward communities, physically challenged women, etc. should be encouraged more to come and avail the facilities being provided by the organizations and benefits out of it.

(4) There is a need to look for innovative ideas which would explore the specific task performed by the ICT models and which would directly benefit women.

(5) Women should be encouraged to go to higher education and technical education. An increase in the salaries of the staff of these organizations might be able to attract more women to come and apply in these organizations.

(6) There is a need for creating a class for ICT savvy women entrepreneur in both rural and urban areas. These groups of women entrepreneurs can help other women in availing the benefits provided by ICT and also set an example for other women.

SUGGESTIONS

The study comes up with some suggestive measures that can improve the participation of women in the knowledge networking sphere.

(1) The women should not be viewed as only beneficiaries but rather as partner, because without their participation, the works of these organizations remain incomplete.

(2) The organization should not underestimate the traditional skills which the women possess and hence they should work, using the medium of ICT to polish these skills and make them economically independent.

(3) Separate clauses needs to be added in the State and National Policies for women and the incorporation of innovative ideas which will directly benefit women.

(4) The organizations should try to empower women by providing them employment or by giving training to them which will harness their skills, thereby making them eligible for certain jobs.

(5) The organizations should focus on sustainability.

(6) Community participation should be encouraged and seen as an ideal parameter for the empowerment of women at the grass roots level.

(7) Since, the infrastructure of ICT is quite sophisticated, focus should be given on imparting Technical Skills and Education.

(8) Partnership should be built between both public and private sectors to intermingle the social development projects along with the corporate ICT ventures which can help in providing capital for the establishment of more ICT projects in both rural and urban areas.

(9) More number of women volunteers and staffs should be appointed.

(10) Separate training session for women as well as group training session and awareness campaigns should be conducted for both men and women, thereby helping in reducing the notion that ICT is a masculine space.

(11) More focus should be given on research and innovation, in order to understand the information requirements of women.

(12) Result based ICT models should be created which would give more importance to social benefits rather than individual profits.

(13) Sharing of workloads and responsibility should be given importance at the family, so that women do not get over-burdened with work and family responsibility and men realize that looking after the family is not the prerogative of women only.

(14) The technology should be designed in such a way that it takes under its purview the restricted free time that is available to many women.

(15) There is a need for the establishment of a gender sensitive policy.

LIMITATIONS OF THE STUDY

This study has its own limitations because of the unavailability of adequate number of organizations and projects working on women and ICT in Odisha. There is also a lack of relevant information and studies in Odisha related to ICTs which makes the collection of literature related to ICT and women in Odisha limited. The researcher also faced problems in interacting with the villagers of Badhinuapalli and Kanheipur due to a difference in dialect. Building rapport with rural women and their family members was a difficult task which the researcher could overcome after frequent visits and constant interaction and patient long conversations. Accessing the urban women is challenging owing to their pre-occupation with domestic chores, jobs and their lack of interest in interacting with a stranger. Getting

appointments from the Government staffs and getting complete response on the questionnaire was quit tedious for the researcher.

The notion of empowerment doesn't hold true for every woman in the actual sense of the term. One of the respondent from Kanheipur village who learned computers from the CIC office located in the village and is earning her living by working in a primary school nearby said that, "We want to work and earn our living, so that we can give a better life to our children and improve our living standards".[8] Even though she was economically independent and was leading a fairly well-off life than before, she looked lost. There seemed to be something missing in her life and she desired to be free, not from her family responsibilities but merely experiencing the sense of freedom, in taking decisions, in doing something exclusively for herself. This underlying sense of unfulfilled desire was witnessed from almost all the respondents. Women, generally do things not exclusively for themselves or their own benefit directly but see their happiness in the happiness of their family. This in a way hints on Amartya Sen's capability approach, where he clearly mentions that if an individual wants to live like a hermit, he/she should be allowed to do so. It can be derived that, women who want to use the mediums of ICT for improving their livelihood can do so but those who don't want to, should also be given the freedom to make their own choice and not looked down upon. Women should have the liberty to make their own choices and act individually or in a group for their own benefit instead of thinking about the larger good and the do's and don'ts of the family and society at large.

ICT, EMANCIPATION AND WOMEN

In the urban, the use of ICT- news paper, TV, internet is much higher compared to rural area. The urban women seems to be inhabiting more in the nuclear family set up than joint and gets to spend more time at her own discretion to spend more time on t.v, news paper, internet. She also has the availability of other ICT infrastructures- as internet café, coaching centers, better college environment with computer teaching, daily basis interface with digitalized systems as banks and other public service offices etc. Despite these we could say that the impact of ICTs in bringing about awareness and independence among the women has not been very remarkable. The change of perception amongst the family and community members has also been slow.

[8] Viewed by a respondent from Kanheipur village on September 15th, 2012.

60 out of 70 respondents were of the opinion that the medium of ICT like newspapers, magazines, TV, etc. are chosen by their husbands, children or other family members. They give less priority to such engagements because the household chores come first for them. The children and husband have more access to t.v., computers and newspapers, thereby making them more of an expert on these mediums which ultimately gives them an edge over the female members of the household in taking decisions relating to the selection and use of the various ICT mediums. The very understanding of what women should spend time learning and knowing is on the time spent on nurturing skills of home keeping.

Thus, it could be interpreted from above observation that, use of ICT has been put more for the purpose of recreation, personal ambition of career growth, and enhancing skills within the permissible zone of expected roles of women as a member of a family. There is certain amount of assertion and aspirations that is visible among the respondents who have gone on to make use of ICT mediums. There is also a severe growth of confidence and self image among the women who have been able to earn a living for their family out of ICT media. However, such a state is achieved after much negotiation, persuasion and pressure. "I really wanted to study further and get a job but my parents got me married at a very early age and my in-laws were also not supportive, so I could not study further. I had to request my husband and in-laws a lot so that they allow me to go and learn computers in the village CIC office, which is quiet close to our house as well for free of cost".[9]

This indicates that ICT in itself is not popularly held as a prospect friendly for women. This might call for a more gendered sensitive and supportive ICT programmes. Another point to be noticed is that, women are allowed to engage in ICT related activites as far as it does not upset the set traditions of women roles. She has to fulfill all the household chores, get the children readied, see off the husbands, attend to the in-laws and then if possible spare time for ICT. That too, in a way is benefiting the cause of family as a whole- enhancing family income etc. Nowhere in the fieldwork women mention on any prominent impact of ICT in their understanding or outplay of patriarchy in their lives. Thus, ICT in itself is not an endorsement of feminism or empowerment.

However, ICT because of its virtual avatar, which enables it to reach out to the very doors and rooms of every women, presenting minimum challenge to the traditional situation and

[9] Viewed by a respondent from Badhinuapalli village on July 25th, 2012.

position for women, it has presented itself as an efficient and very easy media for those women to enjoy opportunities beyond their immediate environment, who otherwise could not have managed to achieve it. Also, the snail pace change in the perception and expectation of the community, emanating from the success of the women using ICT should not be neglected. It has acted as an instrument for women to prove themselves in areas earlier prohibited, there by enabling them to be able to, hopefully in near future, making themselves heard and accounted to.

Lastly, I would like to mention that this thesis deals with several notions like feminism, women empowerment, exclusion, etc. but the central theme of the thesis is ICT and its impact on women. When it comes to ICT, opportunities for women in developing countries and expectations are quite high. It can open up new avenues or channels for the marginalized communities. It offers new avenues for bridging the information gap through interaction, sharing of views and ideas etc. Women need to be empowered through employment by enhancing their potentials by using the medium of ICT. It can be concluded that women of Nayapalli(N6 area), Badhinuapalli Gram Panchayat and Kanheipur Gram Panchayat are empowered to a certain extent through the help of Information and Communication Technology. It has changed their position from past. Even though the sphere of ICT is regarded as masculine space and women are required to act as deemed suitable under the set paradigms of patriarchy, a wave of change is slowly taking place. Women have started realizing the importance of ICT's and its benefits because they want their children to learn computers so that they can lead a better quality of life. This change may be slow and gradual but a seed of change has been sowed.

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