ICTs and Women's Empowerment: Findings from South Asia*

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This paper begins with a discussion of the three policy approaches that can be adopted to harness information and communication technologies (ICTs) in developing countries, and the implications of each vis-à-vis development and gender issues. Presenting the specific social and development contexts in the South Asian countries, the paper highlights the current state of ICTs in these countries as well as national efforts to promote ICT through policy directives. These are then examined in light of the three ICT approaches to understand their potential towards achieving gender equality and social development. Case studies from the region are used to analyse the four pillars of the general framework - women's identity, control over technology, collective action and institutional change - and to develop recommendations for ICT policies in South Asia such that they hold positive and transformative potential for women.

Introduction: Locating ICTs within the Development Context

There is little doubt that information and communication technologies (ICTs) are changing the way in which society is organised. Right from the processes through which data is transmitted, to the way in which business is conducted, to the channels through which news and current events are disseminated, to the way in which individuals and members of groups communicate with each other, and to the manner in which governments make available services and information to citizens, ICTs have impacted the way in which our lives are organised. In fact, the defining characteristic of these new technologies is that they are 'general purpose', in that they permeate all realms and levels of society and transform the world of business, governance, social communication, education, amongst other spheres of our social and personal lives.

As ICTs are characterised by declining costs, widening reach, greater availability and increasing versatility, there is a need to examine their potential within the existing development context. The way in which ICTs are conceived and adopted in national policies plays a significant role in determining their development impacts at the local level. In this sense, there are three basic approaches that can be espoused: the business approach, the enabler approach and the systems approach.

The business approach draws primarily from a neoliberal paradigm, which is 'the assertion that the market is the core institution of modern - capitalist - societies and that both domestic and international politics

are (and should be) increasingly concerned with making markets work well' (Cerny 2004, 4). While the focus of this paradigm is primarily economic, it has wider political and social implications, as it necessitates the creation of institutions that are market-led and infuses in governments and international bodies the need to adopt a 'market friendly' attitude - one that is governed by increased competition, deregulation of sectors, dismantling of barriers on trade and privatisation of public services. By replacing 'government' (a formal institution) with 'governance' (an informal structure), neoliberal policies demand for 'the systematic restructuring of domestic politics around the imperatives of successful insertion of the domestic into the new world politics' (Cerny 2004, 7).

In developing countries, the implications of this market-centric ideology on ICT-led initiatives has created an environment in which the growth of the IT and telecom sectors are seen as best pursued through the market and through the narrow lens of expanding IT and IT-enabled service industries. The private sector is considered a critical partner in this approach and, through increased competition, efficiency of service provision, and reduced costs, is believed to best meet the needs of the people. Liberalisation is a key plank of this approach and necessitates the opening of domestic markets to international players. From a development standpoint, the benefits of a market-led ICT sector for the poor and marginalised sections is seen as coming through a trickle-down effect - where greater domestic and foreign private investment in the IT sector leads to higher incomes and better employment opportunities for certain sections of the population, which in turn is expected to trigger additional jobs and opportunities for those not directly involved in the sector.

There are several issues in substituting universal access to basic entitlements with a privatised, market-centred approach. Bayliss and Kessler (2006, 5) identify three major problems:[1]

> First, to the extent that the spending decisions discipline service providers, those with little or no income can be excluded from public services. Often the poor cannot even become consumers due to their inability to pay for services. Second, the consumer's strongest signal, the decision to change providers, cannot be used for services that are natural monopolies, such as water and electricity utilities. Finally, private provision of public services requires effective regulation by states, which often have weak governance institutions and little experience in monitoring or enforcing complex contracts.

A private sector-led approach is believed to increase the poor's access to services, due to improved service delivery and higher efficiency; yet, it may not necessarily strengthen access for certain categories of the poor, who are located in difficult-to-access regions. Furthermore, in the absence of state regulation, privatisation may actually result in overpricing and low quality of services delivered, worsening the conditions of the poor. In this context, given the 'public good characteristics' of basic socioeconomic services, a private supply of the same would result in outcomes that are below a socially optimal level, and market-based frameworks applied in this context divert attention towards the needs of private players and away from the needs of the poor. Most countries in South Asia have looked up to the spectacular success of the export oriented Indian IT and ITeS (IT enabled services) industries, and have oriented their IT policies largely to meet the needs and demands of these industries, rather than those of the development sector.

The second approach is where ICTs are treated as 'enablers' or tools that facilitate the achievement of a larger goal or end. This approach, advocated in the Digital Opportunity Task Force Final Report, argues that ICTs can contribute towards the achievement of development goals 'by increasing the effectiveness and reach of development interventions, enhancing good governance and lowering the costs of service delivery' (Accenture et al. 2001, 9). In the business realm, ICTs can contribute towards higher productivity, lower costs, reduced delays and improved market standing, leading to higher industrial growth which in turn affects a country's global economic position.[2] The role of ICTs in this approach is to spur improvements either in economic sectors that do not use new technologies in their existing operations, or in development sectors by improving the reach of health, education, social security and livelihoods support services to the people.

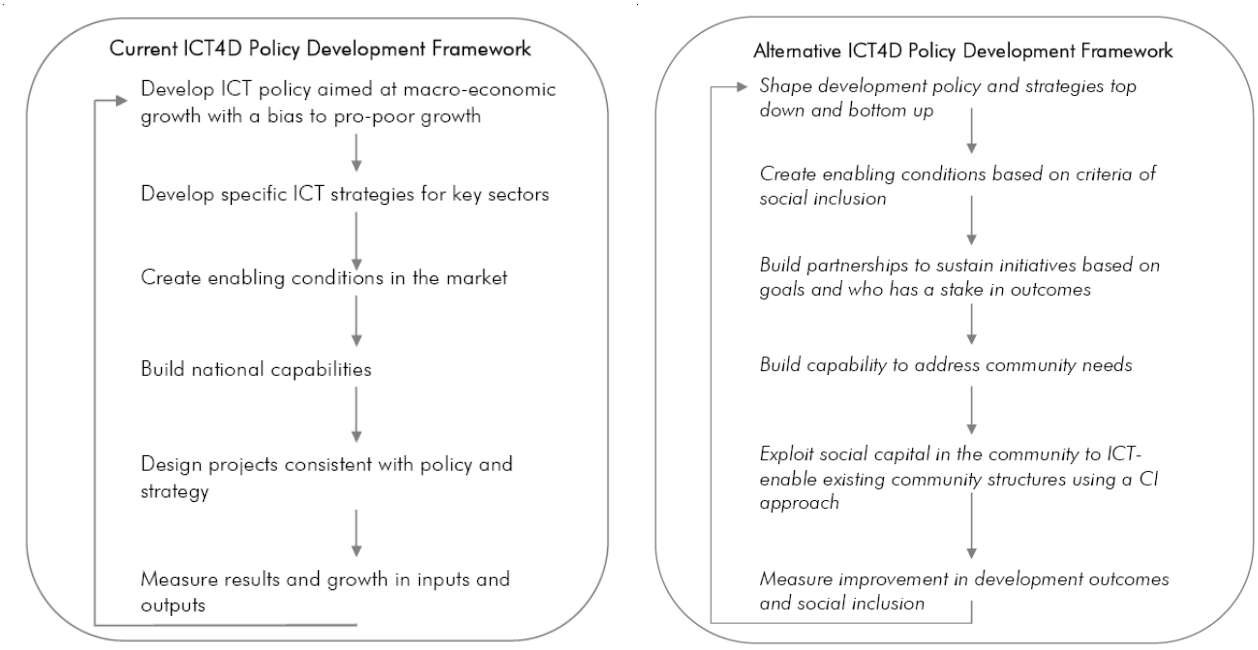
Although this kind of approach recognises the potential of ICTs in the development sector, it mostly adopts the same 'efficiency' formula of the business approach to reach its ends, wherein the reduced inefficiencies and costs brought about through integration of ICTs in sectors is believed to lead to greater availability and accessibility of services for the community. This approach fails to consider power relations at the community level and, thus, has little impact on affecting unequal gender, caste and class relations in society. Greater efficiency and transparency in the provision of government services could benefit the community, but who in the community is able to maximise these benefits depends on the power structures in the community, that assign control over assets, resources and networks to certain groups at the cost of others. A simplistic enabler approach that ignores the power dynamics that constitute information and communication processes in the community (called community informatics in some recent studies) can have limited impact on social justice parameters. Most ICT projects in South Asia - and the region has one of world's largest concentration of such projects - have taken an enabler approach to ICT for Development (ICTD), including those projects that profess gender concerns.

The systems approach, in contrast, adopts a paradigmatic view, where ICTs are seen as transforming and re-constituting many basic structures, institutions and relationships in the society, an aspect which has great relevance to gender equality advocates. The underlying principle is that 'ICT does not just enable us to do new things; it shapes how we do them. It transforms, enriches and becomes an integral part of almost everything we do' (ISTAG 2006, ii). In what is increasingly characterised as an information era or a knowledge era, the approach moves beyond the efficiency gains brought about through new ICT 'tools', and examines how they can be systemically applied towards meeting development and social justice ends. The approach recognises that these new technologies are not neutral; they can (and do) in fact embed themselves in existing social and political structures, and so their potential can be biased towards reinforcing these unequal structures and further marginalising communities and individuals. As Gurumurthy (2006, 1-2) observes in the context of the Internet, which symbolises the digital era:

> …the virtual is not just a new site of struggle or a system of discrimination but in fact a new animal, that strengthens and unleashes old ideologies of exploitation; it is anti-poor, anti-south, racist and patriarchal. In this sense, the virtual is much more real than we think. And the 'digital gap', as we know and understand, does not capture these structural aspects adequately.

This is seconded in Vaughan's (2006) analysis of ICTD policies, wherein she observes that a sustainable ICT policy would pay as much attention to the existing community structures as to the technology itself, if it attempts to challenge these structures and to provide new avenues for social, economic and political empowerment for marginalised groups. She contrasts the business approach model to ICTD policies with an 'Alternative ICT4D Policy Development Framework' (presented in Figure 1), the latter underscored by the parameters of social inclusion and sustainable, community-defined outcomes.

Figure 1. Comparing the Current Approach to ICT4D Policy Development to an Alternate Community-Centred Approach



Source: Vaughan (2006) - the abbreviation 'CI' in the above representation stands for 'community informatics'.

The Gender Dimension within ICT Approaches

The criticism of the neoliberal approach from a gender standpoint is fairly well acknowledged. Çağatay and Ertürk (2004), for example, observe that the neoliberal agenda and corresponding macroeconomic policies have resulted in the retrenchment of public sector jobs, the weakening of public service provisions, and instability arising from international capital flows - and all of these have had adverse redistributive effects on people living in poverty, particularly on women and girls. The commodification, not just of government services, but also of knowledge and life forms that previously were common property, has, on the one hand, devalued and restricted women's use of traditional knowledge and, on the other hand, limited women's ability to access and take advantage of new forms of knowledge available through ICTs. And while the expansion of the IT sector through foreign direct investment and privatisation has resulted in new and better employment opportunities for women, these, like in other export-oriented industries, come with long working hours, restrictions on unionising and, increasingly, a lack of physical security and the absence of formal contracts. Women tend to be concentrated in lower-end and lower-skill jobs. For

the non-literate, poor, rural, non-English speaking women who constitute the majority in developing countries, even these jobs are out-of-reach, and these women continue to remain distanced from the opportunities that come with employment in the IT and related sectors. Thus the feminist struggle lies not just in revealing the shortcomings of the neoliberal approach, which fosters and is fostered by the growth of the ICT sector and is clearly unsuitable for redistribution and sustainable development, but also in adopting new and holistic frameworks to address media and ICTs in a gender-sensitive manner (Jenson 2006).

The enabler approach to ICTs provides some gains from a gender perspective in that new technologies are seen as enabling women to better achieve various ends under the broad goal of 'bridging the digital divide'. For instance, through e-literacy and e-learning programmes, women and girls can secure better education; through information kiosks and portals, women can get regular and accurate information on health, agriculture, livelihoods and job opportunities; through e-governance and computerisation of public services, women can access their entitlements and avail of government schemes and programmes. These benefits are real; yet, an enabler approach has limited potential for a gender equality agenda as it is overemphasises the possibilities made available through an externally-induced technological advancement, in terms of its ability to spur efficiency and innovation, without addressing broader and deeper structural issues.

> (The) big problem with 'the digital divide' framing is that it tends to connote 'digital solutions', i.e., computers and telecommunications, without engaging the important set of complementary resources and complex interventions to support social inclusion, of which informational technology applications may be enabling elements, but are certainly insufficient when simply added to the status quo mix of resources and relationships. (Rob Kling in Warshauer 2002, 5)

By focusing on technology first and people next, it fails to account for social inclusion parameters that would allow individuals and communities to 'fully participate in society and control their own destinies' (Warshauer 2002, 5). A 'technology as enabler' paradigm, by neglecting the socio-political context in which it is embedded, and specifically the roles and statuses that women hold in the productive, reproductive and community spheres within their contexts, provides a limited response to the needs and priorities of women.

The systems approach as a starting point recognises the 'multiplier effect' that ICTs have on a 'wide range of socioeconomic activity', and argues for a strong public policy role in the provision of ICT infrastructure to ensure the inclusion of marginalised groups in order to create social transformation (Gurumurthy 2006, 4). From a gender standpoint, women's access to ICT infrastructure is necessary but not sufficient, as it is tantamount to assimilating women 'into a space that they cannot own and control on their terms and where gender relations mirror existing patterns of marginalisation, exploitation and oppression' (Gurumurthy 2006, 5). The information society offers both risks and opportunities, and Gurumurthy lays out three vantages from which women's rights must emerge - in challenging exploitative pornography, trafficking and other gender-based crimes on the Internet; in revitalising older rights such as the right to information and the right to education, using ICTs; and in taking advantage of new avenues for expression, communication, networking and institutional change, made possible through ICTs. The feminist agenda,

therefore, needs to be two-fold: to change the perception of ICTs as a 'ghettoised area relevant only to those who are privileged enough to have technological access' to a broader arena informed by a women's rights-based framework that includes issues of violence against women; and, for the women's movement to grapple with technologies 'as a site of feminist political struggle' and to take control of the technologies it uses, which influence 'the decisions that direct their development' (Ramilo 2006, 70).

How do these three approaches to understanding ICTs fit within the development and gender contexts of South Asia? No country unilaterally adopts one specific approach at the exclusion of all others - rather, most countries tend to espouse certain aspects of each of these approaches, which then influence their national ICT policies and strategies. This is as true for South Asia, where varied efforts have been made to appropriate and promote ICTs towards various economic, political and social ends. Yet, as mentioned earlier, the approach that is most widely accepted and endorsed by the South Asian governments continues to be the business approach, where the market is seen as the best mechanism to determine and stimulate the growth of the ICT sector and the private sector is seen as the key leader in the ICT arena. The main policy effort in such a context is to push forward pro-market reforms and provide public support and facilities for the growth of IT and related industries.

In the following sections, the South Asian scenario is examined along three dimensions: 1) the development and gender reality of South Asian countries; 2) policy efforts made to integrate ICTs into the national economies; 3) linking ICT policies in different countries to the development contexts to understand the potential (or lack thereof) of these policies to achieve gender equality and social development.

The South Asian Scenario: Social and Gender Equality Indicators

South Asia, despite its rich resource endowments and high gross domestic product (GDP) growth rates in recent years, lags behind on most social and gender indicators, with more than 500 million people living in a state of severe deprivation in terms of even the most basic needs. Table 1 and 2 present some of the data on basic development and gender parameters, which are discussed below.

As can be seen in Table 1, the countries vary significantly in their population, but have similar urban-rural distribution of their population. The proportion of the urban population has been on the rise in the last couple of decades, but continues to be as low as 11 percent in Bhutan and below one-third of the total population in all South Asian countries. This means that a large part of the population continues to reside in rural areas and is highly dependent on agriculture and related activities. The GDP per capita adjusted for purchasing power parity (GDP PPP) reveals that Sri Lanka and the Maldives, with a GDP PPP of over $4000, are clearly better off, but Nepal, Bangladesh and Bhutan, at less than $2000 GDP PPP, are lagging behind. GDP on its own does not reveal the way in which income is distributed amongst various sections of the population and this is where the Gini coefficient provides insight. The coefficient ranges from 0 to 1 and measures the cumulative income share by the cumulative population share, wherein a value closer to 1 indicates greater inequality.[3] Most South Asian countries have a Gini index (which is the Gini coefficient expressed as a percentage) of around 30 percent, which indicates moderate inequality. Nepal has a fairly high inequality index, at almost 50 percent. The percentage of the population living in poverty is dependent on how the poverty line is determined by the national authorities of each country. Although this is not ideal for cross-country comparison, we find that Bangladesh has the highest percentage

Table 1. Demographic Profile and Development Indicators in South Asia

Country	Population (1000s)	Urban Popln. (%)	GDP Per Capita (PPP US$)	Gini Index	Popln. Living Below the National Poverty Line %	Adult Literacy Rate (% ages 15 and older)	Combined Gross Enrolment for Primary, Secondary, Tertiary School (%)	Life Expectancy at Birth (Years)	Under-Five Mortality Rate (per 1000 live births)	HIV Prevalence (% ages 15-49)	Popln. with Sustainable Access to an Improved Water Source (%)	Population with Sustainable Access to Improved Sanitation (%)	Public Expenditure on Health (% of GDP)	Public Expenditure on Education (% of GDP)
Bangladesh	139,215	24.7	1,870	31.8	49.8	41.0	57	63.3	77	<0.1	74	39	1.1	2.2
Bhutan	2,116	10.8	1,969	-	-	47.0	49	63.4	80	<0.1	62	70	-	-
India	1,087,124	28.5	3,139	32.5	28.6	61.0	62	63.6	85	0.9	86	33	1.2	3.6
Maldives	321	29.2	4,798	-	-	96.3	69	67	46	<0.2	83	59	5.5	8.1
Nepal	26,591	15.3	1,490	47.2	30.9	48.6	57	62.1	76	0.5	90	35	1.5	3.4
Pakistan	154,794	34.5	2,225	30.6	32.6	49.9	38	63.4	101	0.1	91	59	0.7	2
Sri Lanka	20,570	15.2	4,390	33.2	25	90.7	63	74.3	14	<0.1	79	91	1.6	-

Source: Human Development Report (2006)

Table 2. Performance on Maternal Health and Gender in South Asia

Country	Gender-Related Development Index (Value)	Total Fertility Rate	Births attended by skilled personnel %	Maternal Mortality Ratio (per 100,000 live births)	Life Expectancy at Birth (years) - MALE	Life Expectancy at Birth (years) - FEMALE	Adult Literacy (% 15 yrs and older)- MALE	Adult Literacy (% 15 yrs and older)- FEMALE	Net Primary Enrolment (ratio of female to male)	Ratio of estimated female to male earned income	Female economic activity rate (%15 and older)	Seats in Parliament held by Women (% of total)
Bangladesh	0.524	3.2	13	380	62.5	64.2	51.7	33.1	1.03	0.46	52.9	14.8
Bhutan	-	4.4	37	420	62.2	64.6	-	-	-	-	44.3	9.3
India	0.591	3.1	43	540	62.1	65.3	73.4	47.8	0.94	0.31	34	9.2
Maldives	-	4.3	70	140	67.4	66.6	96.2	96.4	1.01	-	46.1	12
Nepal	0.513	3.7	15	540	61.6	62.4	62.7	34.9	0.87	0.5	49.7	6.7
Pakistan	0.513	4.3	23	500	63.2	63.6	63	36	0.73	0.29	32	20.4
Sri Lanka	0.749	2	96	92	71.7	77	92.3	89.1	1	0.42	35	4.1

Source: Human Development Report (2006).

of people living below the poverty line - almost half its population - and Sri Lanka has the lowest, at 25 percent. On average, one-third of South Asia's population lives in poverty.

Given that basic education and literacy are recognised human rights in various international declarations, adult literacy rates and enrollment rates are compared across the region. There is great variation in the adult literacy rate, with four of the seven countries falling below 50 percent. India scores moderately higher, at 61 percent, whereas Sri Lanka and the Maldives are on par with the developed countries, at 91 and 96 percent respectively. Where combined enrollment in primary, secondary and tertiary schools as a percentage of the school age population is concerned, Pakistan has the lowest enrollment rate at 38 percent while most other countries fall in the 50-60 percent range.

Life expectancy at birth is considered an important human development indicator. Sri Lanka is the only country with a life expectancy greater than seventy years, while all other countries are very similar with a life expectancy of around sixty to sixty three years at birth. Under-five mortality captures the probability of a child dying between birth and five years. For every 1000 live births in Pakistan, the under five mortality rate is 101, which means that one in ten children is likely not to live up to the age of five. India, Bangladesh, Bhutan and Nepal are not far behind, while Sri Lanka again ranks amongst the developed countries, with a low under-five mortality rate of fourteen children per 1000 live births. HIV prevalence is currently not very high for countries in this region, compared to counterparts in Africa.[4] Although most countries, except Bhutan, have a relatively reasonable proportion of their population with sustainable access to an improved water source (such as household connections, public taps, boreholes, etc), there is great variation in the sustainable access to improved sanitation.

Less than 40 percent of the population in Bangladesh, India and Nepal has reasonable access to sanitation, whereas more than 90 percent of the Sri Lankan population does.

Finally, Table 1 takes a brief look at public spending priorities in the South Asian countries. Most countries spend an abysmally low percentage of around 1 percent on health, barring the Maldives, where the government spends 5.5 percent on public health. The education scenario is equally appalling as - barring the Maldives again - the countries, despite their poor literacy records, spend just 2 to 3 percent of their GDP on providing education for their population. Interestingly, these countries spend about the same percent of their GDP on military expenditure.

Table 2 (see p. 85) takes the indicators one step further, analysing how countries perform on gender equality parameters. The Gender-Related Development Index, which adjusts the human development indicators of life expectancy, literacy and enrollment and income for inequalities across men and women, shows that South Asia ha s mediocre performance. Even Sri Lanka, which leads the region at 0.749, is still much behind the developed countries of the world.

As Millennium Development Goal (MDG) number five emphasises improving maternal health, the total fertility rate, the number of births attended by skilled personnel and the maternal mortality rate are examined. Although the total fertility rate has declined in all countries in the past decade, it still remains high at an average of three to four births per woman. Sri Lanka has reached fertility replacement rate with two births per woman on average. The relatively high fertility becomes problematic when the percentage of births attended by skilled or accredited health personnel (doctor, nurse or midwife) is examined - in

Bangladesh and Nepal, only 13 and 15 percent, respectively, of all births are attended by skilled personnel. The rest of the countries, except for Sri Lanka, are not much better off, well below the world average of 61.5 percent. Maternal mortality is also very high - Nepal, India and Pakistan are at the bottom of the chart, and even Sri Lanka falls below the world average. These figures indicate the extremely poor condition of reproductive health in South Asia.

Comparison of some indicators in terms of men-women difference shows that there is not much difference in the life expectancy of men and women at birth, and in most cases, women have a slightly higher life expectancy than men. Adult literacy rates reveal a much larger disparity, where for every ten men who are literate, only five or six women are literate in Pakistan, India, Nepal and Bangladesh. The island countries, Sri Lanka and the Maldives, have achieved gender parity in adult literacy rates as well as in enrollment in primary schools. With regard to the latter indicator, the rest of the South Asian countries are not far behind, although Pakistan has some catching up to do. Estimated income is based on female and male non-agricultural wages and other parameters, and where developed countries themselves perform moderately with ratios of .6 and .7, women earn less than half of male earnings in South Asia and lower than one-third of male earnings in Pakistan. The female economic activity rate is increasing rapidly in the region, but still remains below 50 percent in all countries except Bangladesh. Finally, looking at the seats held by women in the parliament (lower or upper house), we again find that in no country in the world are women on par with men. Compared to the best performing country, Sweden, where 45 percent of all seats are held by women, in South Asia approximately 10 percent of the seats are held by women. Pakistan is the noteworthy exception, with 20 percent of its parliamentary seats being held by women.

While most of the social and development indicators reveal that the South Asian performance has been average at best, the maternal health and gender indicators highlight the poor performance of the region in ensuring decent life chances and opportunities for women. This is further revealed by research studies in the region. Oxfam's (2004) study on violence against women in South Asia presents some shocking findings from other studies done in the region on the issue. When asked about violence in the household, 80 percent of Pakistani women, 50 percent of Indian women, 47 percent of Bangladeshi women and 60 percent of Sri Lankan women reported experiencing some form of violence within the home. The extent of violence goes even further, with the continued prevalence of women being raped and killed under the pretext of 'honour' killings in Pakistan; dowry-related violence against women and suicide by women due to dowry harassment in India; acid attacks against women in Bangladesh; increased sex trafficking of Nepali girls and women; and sex-selective abortions in most parts of India and some regions outside of India.

Women's unequal status in various realms impacts their access to social protection and their capacity to manage vulnerabilities, risks and crisis, including that of domestic violence. In such contexts, studies hypothesise that 'women's rights over ownership and control of property and inheritance would be protective for women from social and economic shocks, particularly those arising from the experience of domestic violence' (Batla et al. 2006, 5). Yet, women's property ownership is extremely low in South Asia and furthermore, sex-disaggregated patterns of land and house ownership are not captured in official census studies. Field level research studies, such as those undertaken by the International Center for Research on Women. provide a glimpse into property ownership by women in the region (see Table 3, p. 88).

Table 3. Rural-Urban Prevalence of Property Ownership by Women

Ownership of Property by Women	Sri Lanka (%)	West Bengal (%)	Kerala (%)
Currently own property			
Rural	23.0	26.0	29.1
Urban	44.0	50.0	47.5
Do not own property			
Rural	77.0	74.0	70.9
Urban	56.0	50.0	49.4

Source: Batla et al. (2006)

A cursory glance at indicators relating to and studies of the South Asian region clearly show that women in the region face discrimination in multiple spheres - literacy, employment, political leadership and asset ownership, amongst others - and face multiple inequalities in the household, as daughters, wives or mothers. Where do ICTs fit into this picture? The next sections capture, first, ICT statistics in the region and then, the ICT policy scenario in South Asian countries from the context of gender and development.

ICTs in South Asia: Present Condition of Connectivity and Affordability

Table 4 presents some of the information and technology indicators of the region.[5] The number of fixed and mobile subscribers per thousand of the population shows extremely low performance for all countries except the Maldives. On average, only seventy six in every thousand persons - less than 8 percent - in South Asia have subscriptions to fixed landlines and mobile phones, and this puts South Asia below its Asian counterparts, Latin America and even the Middle Eastern region. Telephone mainlines, or the number of telephone lines connecting a customer's equipment to the public switched telephone network, again shows that South Asian countries have fairly low connectivity. Bangladesh, with six persons per thousand connected to the public switch, and Nepal, with thirty persons per thousand, fare particularly poorly. The countries perform better on the percentage of the population within the range of a cellular signal (covered by mobile telephony): on average, 43 percent of South Asia is covered by mobile telephony, with Bangladesh and the Maldives covering over half of their population. Given that television is a much older technology, the share of households with a (colour) television set, should be fairly high even in the developing countries of South Asia. We find that on average about one-third of the households have a television set in South Asia, ranging from only 3 percent in Bhutan to 68 percent in the Maldives. The world average of households with television sets is 84 percent.

Where computers and Internet connectivity are concerned, South Asia, despite promoting itself as an 'IT destination', has very low usage across its population. Broadband subscribers - with a digital subscriber line, cable modem or other high-speed technologies - average 1 percent for the entire region, which is hardly comparable with the average of twelve persons per thousand for lower-middle income countries[6] or

Table 4. ICT Indicators of South Asian Countries

Indicator	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka	South Asia
Fixed line and mobile phone subscribers (per 1,000 people)	37	53	85	451	22	63	165	76
Telephone mainlines (per 1,000 people)	6	33	41	98	15	30	51	35
Population covered by mobile telephony (%)	50	-	41	71	-	45	30	43
Households with television (%)	29	3	37	68	-	39	32	32
Broadband subscribers (per 1,000 people)	-	-	1	2	-	-	-	1
Internet users (per 1,000 people)	2	22	32	59	7	13	14	26
Personal computers (per 1,000 people)	12	12	12	112	4	5	27	12
Price basket for residential fixed line (US$ per month)	7	-	3	8	3	6	7	3
Price basket for mobile (US$ per month)	4	-	3	-	3	3	4	3
Price basket for Internet (US$ per month)	20	73	9	62	13	16	15	15

Source: World Bank (2006)

the world average of thirty two persons per thousand population. The same is the case with Internet users, or the number of people accessing the world wide computer network, where even the highest performer in South Asia, the Maldives, with fifty nine users per thousand population still has fewer than lower-middle income countries (seventy four users per thousand population) or high income countries

(545 users per thousand population). Finally, data on personal computer owners, or the number of single individuals owning self-contained computers, shows that only 1 to 2 percent of the population owns computers in all of South Asia, barring the Maldives, where more than 10 percent of the population owns personal computers. Recognising that data on connectivity is not strictly comparable as it is drawn from national surveys and estimates, it is still safe to say that South Asia as a region underperforms when compared to the world average.

With reference to the poverty and development situation highlighted in the previous section, affordability of ICTs is a central issue in the South Asian region. The price baskets for residential fixed lines,[7] mobile phones[8] and the Internet[9] are used to ascertain the affordability of ICTs. The method of calculation of each of these is provided in the footnotes, and for each variable, the data in the national currency is converted into US dollars[10] per month based on the annual average exchange rate. The data reveals that in fact, the price basket for residential fixed lines is significantly lower in South Asia compared to the rest of the world, with the cost in most countries ranging between $3-8 per month. Similarly so for the price basket for mobile in South Asia, which is around $3-4 per month and is lower than the average for lower middle income countries of $10 per month. Internet costs vary significantly in the region, from as low as $9 per month in India, to as high as $62 and $73 per month in the Maldives and Bhutan respectively. The average for the region, around $15 per month, is lower than the world average or the average for high income countries which range in the 20s. In general, the dataset reveals that the price basket for ICTs in the South Asian region is lower than the averages for lower middle income or high income countries as well as the world average. This could be a critical factor for accessibility by marginalised groups, including women, an issue that will be examined in greater detail in next section.

Taking Stock of the ICT Policy Scenario in South Asia

Starting in the 1970s with Sri Lanka, and then in other countries in the region in the early 1990s, highly closed and restrictive economic systems were opened up and liberalised, with the regular prescriptive measures of currency devaluation, reduction of tariff and non-tariff barriers, removing restrictions on import and exports, and non-trade measures of deregulation, privatisation, and tightening of fiscal spending. A component of this regime is the deregulation and liberalisation of the telecom and IT sectors. Policy measures in this regard came about as early as 1983, with Sri Lanka's National Computing Policy that led to the setting up of Computer and Information Technology Council of Sri Lanka. But it is largely since the mid-1990s that the South Asian countries have established national IT policies in which strategies and action plans for specific areas, such as infrastructure, connectivity, capacity building, e-commerce, privacy and human resource development, are spelled out.

How do these national policies on IT, telecom and broadband fit with the three approaches laid out in earlier sections? And what is their potential from a gender and development standpoint? While the specifics of each country's policy will be discussed below, three broad generalisations can be made about the focus of all of these countries' policies. One, the policies mostly concern themselves with the export potential of IT and related industries; consequentially, there is little vision for a domestic economy and/or national society based use of IT. Two, even if viewed in terms of their impact on the society, these policies see ICTs narrowly as efficiency enhancing 'tools' that can bring about productivity gains and

reduced costs in the various spheres in which they are applied; ICTs are, thus, considered to be best appropriated through a market-based or a business model approach. And three, although some countries address a host of socioeconomic development issues in their policy documents, gender concerns find minimal reference, if at all. Even when references to women exist, they tend to be fairly tokenistic, without comprehension of the real issues - the challenges and the opportunities - involved.

India and Pakistan's ICT policies completely embrace what has been discussed earlier as the neoliberal agenda in the ICT arena. The policies are grounded in creating a competitive market environment pushed through private sector investment and leadership and explicitly oriented towards the economic growth and export revenue potential of ICTs. The strengthening and expansion of ICT infrastructure - basic telecom or broadband - is to be achieved through specifying obligations of and providing incentives to the private sector, towards the goal of faster economic growth. Local producers of hardware and software are to be encouraged by policy and material support (information technology parks) with the basic objective of capturing global markets.

From a development standpoint, the lack of access and affordability of ICTs is recognised as a concern that needs to be addressed - something which is true not just of India and Pakistan, but of all the South Asian countries. A provision of using Universal Service Funds, collected as a proportion of the earnings of telecom providers, is mentioned in most policies in an attempt to bring ICTs (and their expected benefits) to rural and geographically difficult-to-reach areas as well as to marginalised groups. The need to integrate ICTs into development sectors such as health, agriculture, governance or education is articulated in the light of the efficiency gains and greater transparency that it can bring. Capacity building efforts in the government sectors are seen in the same light. From the citizen's perspective, human resource development is the catchphrase, wherein ICT education in colleges and universities and training through various kinds of public and private institutes is considered an essential building block for the growth and sustainability of the ICT industry. The goal in this regard is to develop a skilled and competent workforce that can seamlessly contribute to the IT and telecom sector's growth and, thereby, the country's economic growth. An expansion of telemedicine, distance learning and e-government services is contemplated with the intention of meeting the needs of under-served areas while also increasing the 'competitive edge' and skills of the local companies that make the hardware and applications for these services. Pakistan's policy documents make mention of promoting local language software and content development as well as open source software in government offices, while the Indian policy highlights the need to develop ICTs as tools for disaster mitigation and management.

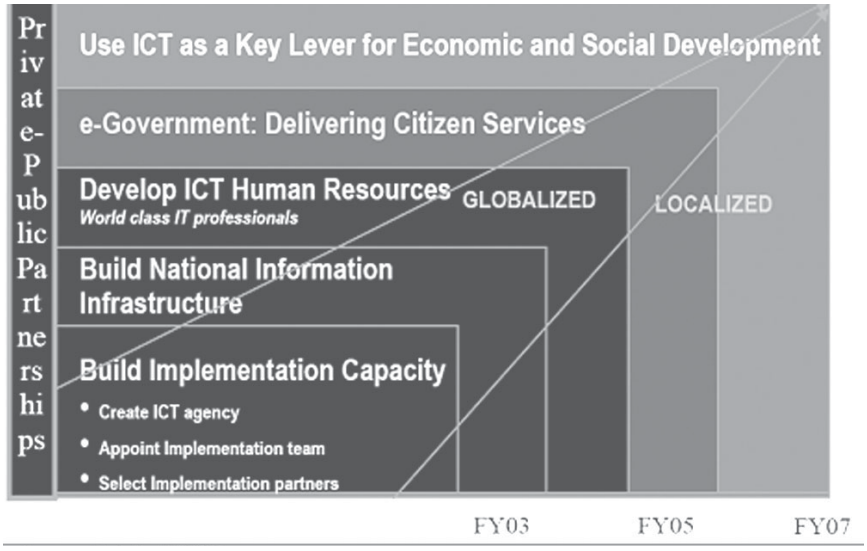
Interestingly, the IT Policy of Pakistan, in its discussion of e-commerce and broadband, recognises the pervasive and transversal nature of ICTs; the role that ICTs are playing in changing business and social systems and in providing new solutions to address existing human development issues; and how the information society brings about new capabilities that were not possible in the industrial society. While seemingly endorsing the systems approach to ICTs, it sidelines the role of public policy in the same breath by stating that the role of the state is to regulate the telecom and IT industry and to create the right incentives for the market to function and for the private sector to participate in the market. The policy calls for making the 'government a facilitator and an enabler to provide maximum opportunities to the private sector to lead the thrust in development of IT in Pakistan' (Government of Pakistan 2004).

The vision of Bangladesh's ICT policy emphasises empowerment of citizens and enhancement of democratic values through ICTs. Yet, the 'ICTs as an enabler' approach is coupled with other statements that express the need to push the export potential of the ICT sector to enable growth. Here, too, the training of teachers and the development of a skilled workforce is with the goal of reducing bottlenecks in the ICT industry which is to be promoted through Special Economic Zones. Infrastructure is to be built by deregulating the telecom market and 'cooperating' with the private sector to reach unserved areas. Increased access through higher teledensity is expected to increase the socioeconomic condition of the people, as is the increased efficiency resulting from integrating ICTs in agriculture, fisheries, medicine, environment and governance. The policy calls for the participation of private professionals to run the ICT Cells in each government department and coordinate the implementation of ICT projects and services, while assigning the role of village level hardware and software provision to NGOs.

Sri Lanka's ICT policy calls for an enabler role for ICTs, to achieve growth across all business and social sectors and to bring about economic growth, peace and equity (see Figure 2). Similar to the other country policies, it asserts the need to 'to rebrand Sri Lanka as a destination of choice for ICT products, services and investments' by strengthening the ICT export industry through increased competition and through creating thousands of jobs for ICT professionals (ICTA 2008). Empowerment of the rural poor, women, youth, and other disadvantaged groups is also recognised as a key goal. Through distance and e-learning initiatives and affordable access to information and knowledge through the setting up of rural telecentres, or Nenasalas, ICTs are expected to act as a key lever for socioeconomic development. The e-Sri Lanka policy is unique because it talks about participation of local communities who must take complete ownership, identify their needs and participate in the designing stages of the process. Furthermore, women are recognised as a marginalised group along with the poor, displaced persons, and people living in conflict areas, and for these groups a grant fund is to be established to develop innovative ICT-based solutions.

Nepal's ICT policy calls for the need to harness ICTs in order to become a knowledge-based society and achieve socioeconomic development, poverty reduction and good governance. On the one hand, ICTs are seen as enablers that can bring about unique opportunities in sectors such as education, agriculture, tourism, health and trade, and whose application will 'engender economic consolidation, development and strengthening of democratic norms and values, proportional distribution of economic resources and enhancement of public awareness, thereby raising living standards and, eventually, contributing significantly towards poverty reduction' (Government of Nepal 2004). On the other hand, it takes on the narrow view of ICTs as growth enhancers and directs efforts at creating an enabling environment by developing IT parks and offering incentives such as tax holidays to foreign investors to promote export of hardware, software and IT-enabled services. The policy takes into account development concerns in access to ICT and Internet infrastructure, calling for the need to establish multimedia community telecentres in Village Development Committees. Nepali language content and applications are to be encouraged as are open source standards in software development. Special mention is given to women, who are amongst the marginalised groups, and with whom ICTs are to be promoted 'without barriers' to bring about rural sector development.

Figure 2. Sri Lanka's Five Programme Strategy



Source: Rainford (2005)

The Maldives and Bhutan are the smaller countries in South Asia. Their ICT policies take into account the geographic difficulties that they face as an island nation and a landlocked nation respectively. The Maldives ICT policy notes that although high levels of telephone, mobile and Internet coverage have been achieved, the costs are prohibitively high and a series of measures need to be undertaken to reduce costs and increase affordability. The primary measures in this regard are privatisation and increased competition, in addition to using innovative technologies such as Internet phone and Inmarsat satellite service. While prioritising ICT development in those islands that are centres of economic growth, that are densely populated and where there are tourist resorts, the policy also calls for abolishing differentials in telecom charges across islands and for setting up residential phone lines and local telephone networks in unserved islands. The government's role as a regulator of tariffs and in setting the contribution of service providers to the Universal Service Fund is highlighted. From the development perspective, the policy emphasises an increase in access, awareness and knowledge of ICTs.

Bhutan sees ICT as an enabler and as an industry that can be utilised to achieve the MDGs and advance what Bhutan calls the 'Gross Happiness Index', with the government playing a key role. The cross-cutting nature of ICTs, and the challenges and opportunities they present, necessitate a multi-sector approach geared towards making governance transparent and inclusive; setting up a modern regulatory framework; liberalise infrastructure and making it competitive to ensure better service and wider access; strengthening human capacities through ICT education and technical skills training; and boosting private enterprise in the ICT sector. The policy realises the threats and potentials of globalisation and sees ICTs as essential to connecting to global markets, knowledge and ideas while preserving cultural heritage and identity. Open source software and open standards in infrastructure are seen as important, as are efforts to strengthen local language and content support. The policy expresses a keen interest to participate in the ICT-exports sector through outsourcing opportunities. At the same time, it addresses development concerns such as ICT-education for the youth, e-governance services to facilitate active citizen participation, especially for those located in mountainous areas, and universal access to networks and services.

Why do ICT Policies Matter from a Gender and Development Standpoint?

The previous sections provided an overview, first, of the social and gender indicators in the South Asian countries, and then, of these countries' ICT indicators and of the main priorities of their ICT policies. A look at these in tandem reveals a serious mismatch: despite the poor performance of the region on basic development indicators, ICT policies fail to take into account the conditions of poverty and deprivation in South Asia and the wide gender inequalities that exist in the region. The review of the South Asian countries' ICT policies reveals that they have largely embraced a neoliberal outlook wherein the potential of ICTs is mostly seen in terms of the needs of the industry sector and its ability to produce revenues through export as well as to generate employment. From this starting point, the policies go on to develop those elements that would support the IT industry: IT education in schools and universities and in newly established institutions that will produce a cadre of IT skilled people who can fulfill the growing human resource requirements of these industries; technology parks with attractive incentives, such as tax holidays, offered to spur foreign and local companies to invest in the region; reduced duties on import of IT hardware and the promotion of domestic production of hardware and software to compete with the global industry; and so on. From this angle, the South Asian market-centred, private sector-led ICT sector has been hailed as a huge success in its ability to generate jobs on a scale of thousands for the educated population and to provide incomes that are relatively higher than those paid in non-IT service industries. In India, for example, there are approximately 800,000 people employed in registered IT and ITeS companies and software engineers earn approximately Rs. 30-40,000 per month,[11] while in Pakistan, despite relatively higher salaries, there is still a huge gap in meeting the human resources requirements of the 1300-odd IT and telecom companies (Upadhya 2006).

A common element of all the country ICT policies is the strong backing of private sector leadership in the ICT arena. While policy support for the IT industry is certainly required, the promotion of the private sector to the extent that it is also supposed to take on roles that fall into the realm of public policy is problematic. The policies call for private players to take on a leadership role, compensating for the inability of the state to meet basic infrastructure and connectivity requirements thus far. The improved service quality and price reduction that private players can bring about, through increased competition and efficiency gains, are expected to increase coverage and connectivity even to underserved and difficult-to-reach regions. However, the reality, as exemplified by the ICT indicators of the South Asian countries, is that - considering that the costs of technology deployment have gone down drastically - infrastructure provision has not increased sufficiently outside of urban areas in the last few years, even when private players have played a dominant role.

In India, for example, while urban teledensity reached 30 percent in early 2006, rural teledensity remained at a low 2 percent (Jain 2006). This is because private players have been reluctant to get into 'unprofitable' rural telecom provision, and this despite special provisions created by the Telecom Regulatory Authority of India to enhance connectivity to remote areas. These provisions include a Universal Service Obligation Fund (USOF), to which all telecom providers are expected to contribute 5 percent of Aggregate Gross Revenue; a Universal Service Obligation (USO), to ensure that telecommunication services expand in remote areas; and Access Deficit Charges, whereby telecom providers are expected to contribute towards a fund to subsidise rural landline connectivity. Most USOFs lie unutilised in India while private telecom

providers make a mockery of the USO by failing to fulfill their license obligation for rural telephony and preferring to pay fines instead. Access Deficit Charges have been greatly cut, affecting the public sector provider's ability to extend telephony into rural and other difficult-to-reach areas. The lack, until very recently, of public policy endorsement and support for open standards and open source software applications and low-cost hardware oriented to the low-end markets has also meant that ICTs have been out of reach for the vast majority of the poor in South Asia, who can by no means afford the exorbitant cost of proprietary applications or standard IT hardware which has a high rate of obsolescence built into the business model.

Proceeding from a private sector and market-centred orientation, the ICT policies of these countries also recommend that ICTs are to be used in the spheres of health, agriculture, tourism, culture, education, and so on, to enhance the efficiency and reach of these sectors. On the governance front as well, efforts to set up community centres or kiosks in rural and remote areas are limited in their vision, in that they concentrate almost exclusively on improving the supply side in the form of greater reach, reduced delays and more affordable access through ICT-induced elements of transparency, accountability and efficiency. While the promotion of these 'one-stop-shop', '24/7' type service centres are essential steps in improving governance, the sole focus on cleaning up and speeding up the supply of government services and schemes has come without a simultaneous push on the demand side. In other words, few concentrated efforts have been made to make communities and local governance bodies aware of the kinds of changes being brought about through e-governance experiments, or to involve them in the design, implementation or monitoring of projects. Furthermore, e-governance initiatives have been implemented with private sector participation and with the parallel objective of connecting remote communities to the mainstream market, so that the products and services of the private, corporate sector get a larger market base. These two aspects of e-governance initiatives in South Asia - the developmental and governance services on the one hand and outreaching markets often through private monopolies, on the other - are not reconciled. In effect, telecentres have come to embody the extended arm of globalisation by bringing the markets that govern urban life into rural areas, rather than a space to battle existing development challenges and unequal power structures.[12]

The potential of using ICTs for development from a gender standpoint is lost on most fronts by the policy makers. By proclaiming that the IT sector provides new and previously unavailable opportunities to women who possess the necessary qualifications and skills, it is assumed that they can compete with their male counterparts to reap the benefits of a modern, 'forward thinking' industry and through relatively high incomes, can become economically empowered. This argument rests on the assumption that the IT industry is a gender-neutral space, right from the entry requirements to the conditions of work and potential for growth in the sector. Yet, this is contradicted by the findings of ethnographic research conducted by Upadhya (2006, 83-84), who reveals that 'the working conditions and management systems in this industry present greater obstacles to women than men in terms of entry, retention and career growth'. She attributes this to a failure on the part of the management of the IT sector to:

> recognise that although they might treat women employees on par with men and even provide special facilities to cater to their needs, women still live in a gendered society and highly unequal domestic situations. While software companies may be 'global' workplaces that attempt to divorce themselves from the larger society, relationships at

> work continue to be shaped by the conflictual and asymmetrical gender relations that prevail more broadly within the Indian middle class. (Upadhya 2006, 84)

Looking beyond the IT and telecom industry, there is marginal, if any, attention given in the ICT policies to women who are not IT-literate, or even school literate, who do not live in urban areas and who do not possess the income levels to afford the benefits of the so-called 'IT revolution'. On the one hand are a significant number of initiatives launched by the government and private sector (and sometimes even the NGO sector), that approach technology as a 'neutral' tool and assume that its effects can be isolated from the local community context in which unequal power structures, including unequal gender roles and statuses, are reinforced. Effectively then, these initiatives proceed from a simplistic view that mere provision of ICT-enabled information or services will benefit those in the community in an undifferentiated manner, as technologies underlying these services are gender, caste and class 'neutral'. On the other hand, there are a set of initiatives that proceed from an empowerment motive, but where the term is usually watered-down to capture the benefits resulting from women's access to previously unavailable information or services, or from the income earned by women who become managers of revenue-generating telecentres or kiosks. Income earning opportunities are, of course, of great importance - indeed, an independent and secure income is quoted in many a scholarly study and claimed by poor women as a critical factor in ensuring survival and bargaining power within and beyond the household, and the interlinkages between economic empowerment and other kinds of empowerment are many. But a primary focus on employment and income generation is not sufficient to fully and meaningfully empower women in a region where female adult illiteracy levels are greater than 50 percent in four out of six countries; where women's participation in the agricultural and informal sector is very high; and where even those women working in privileged IT jobs and earning high incomes do not have complete autonomy over decisions in their household.

Thus, at both the policy level and at the project level, the South Asian ICT scenario is broadly one in which an explicit pro-poor and pro-women emphasis is absent, and where a narrow market or business focus comes at the cost of the empowerment and social justice gains that could have resulted from a more systematic approach to using ICTs for social and developmental objectives. In a policy context that fails to address gender and development in a paradigmatic and holistic manner, what are the options for the vast majority of women of the region who remain untouched by the present ICT policies? The situation may look dismal on the policy front, yet there are some inspiring case studies in pockets of South Asia, that show how new technologies have been appropriated for women's empowerment through various means - using ICTs to strengthen women's political and social identity, stimulating far-reaching ICTs-induced structural transformations and thus, challenging the status quo norms that define gender relationships. These are presented in the next section.

Stories from the Sub-Continent: Women's Empowering Engagements with ICTs

Women's Collective Identity

Women-centred community radio programmes are widely acknowledged as an effective medium for women to discuss and share issues and build a collective voice based on their common identity as women. There

are a few outstanding examples from the field, where explicit women-oriented radio programmes have been established or where women-centred content is prioritised within the larger ambit of the programme. Two such examples are presented below.

The Radio Ujjas project by Kutch Mahila Vikas Sangathan (KMVS) in Gujarat, India, is an excellent example of the use of radio to strengthen women's identity. KMVS has worked in one hundred and fifty villages of Kutch district for the past fifteen years, and in 1999 began a series of bi-weekly radio programmes in the Kutchi dialect (Virmani 2002). The programmes are broadcast on a purchased time slot, on the AM frequency of the state-owned All India Radio. The media team, which includes village youth with basic education, works closely with the women's collectives of KMVS, who provide guidance in the editorial content to reflect their ideology, aspirations and experiences and also ensure that the programmes reflect the needs of the most marginalised communities in Kutch, including women, minorities and the disadvantaged castes. There are a wide variety of programmes broadcast in multiple formats, covering women's issues such as female infanticide, dowry, violence against women, collective management of resources and elected women representatives, and other village-level issues. The initiative has also helped revive and popularise local cultural forms of expression and storytelling and has generated a platform for the articulation of sociopolitical and economic issues confronting the community.

> 'During these four years of radio programming and communicating with the people of Kutch, we have learnt many things. We realised radio's affinity with oral, non literate cultures; how it can easily reflect and generate debate on local concerns, needs, priorities and issues; why this highly localised programming brings pluralism into our broadcast culture; its power to enhance a sense of self respect and how a radio programme in the local language affirms local cultural identities. These kinds of programmes are participatory in contrast to the alienated spectatorship on the part of the audience in mainstream media,' says Latabhen, Ujjas Production Group.
>
> *Source:* Soni (2004)

An obvious indicator of the programme's success is its listernership, of more than two-thirds of the Kutch population, and the 'scores of postcards' received at the studio as well as phone calls from listeners during the programme (Virmani 2002, 3). There are several reasons for the programme's success. The programme builds on a strong grassroots network that was in existence for many years before the need for a radio component was felt and expressed by the women. Furthermore, the content of the programmes is presented in the language and cultural form that is familiar to the audience and is completely in sync with the socioeconomic background of the listeners and the issues they face in their local communities. Aside from the women's involvement in the editorial content, radio reporters also travel to villages and sit in with the community during the broadcast to raise issues for discussion.

The Deccan Development Society's (DDS) community radio programme was established from women's expectations that their own radio 'would provide more effectively a medium for articulating locally relevant issues, in their own language, and in their own time' (Satheesh n.d). These are poor dalit (disadvantaged castes) women from Zaheerabad area of Medak District in the state of Andhra Pradesh, India, who are members of DDS women's groups and are working on issues of food sovereignty, autonomy over natural resources, traditional knowledge and gender justice for several years. The radio programmes,

managed by a three women team, are narrowcast through the distribution of audio tapes in the seventy five villages where DDS functions, where women's groups listen to the programmes. Over three hundred hours of recording have been completed, on issues ranging from a wide array of agricultural topics in tune with the agricultural seasons to other topics such as gender, education and health (Satheesh n.d.).

A typical radio magazine heralding the rainy season

- Starts with sounds of drum (Alugulu) typical of the area
- Song: Vaana Vaanalante Valcherutunnaaru Devuda (a traditional song on rains)
- Followed by sounds of rain and cattle
- Anchor comes up and talks about the impending rainy season and possibility of diseases for cattle. She also introduces a traditional animal healer, Hulgera Sangappa, who will be interviewed on the kinds of diseases that afflicts cattle and their natural cures
- Interview with Sangappa follows
- Another song on cattle and rain
- Anchor follows and says that women have far more intimate knowledge of the animal diseases and the healing methods and therefore a discussion with a group of animal health workers.
- Discussion follows
- Song: Vaanakalam Poyi Chaana Kaalam Aaye Devuda (a traditional song on rains)
- Anchor: signs off

Source: Satheesh (n.d.)

Why is the DDS radio programme so successful? Similar to the KMVS initiative, the DDS programme came out of a need expressed by women in an annual meeting of DDS, and the issues discussed in it are central to the livelihoods and struggles of marginalised dalit women. The quotes below from some of the women (Sateesh n.d.) highlight this adequately:

> Sidddamma, Matoor: 'If we are talking on our radio about our DWCRA[13] group's experiences. We will tell about where we bought the goats. How did we take care of them. What were our problems. How did we solve them. And how did we make profit out of it.
>
> Their (the mainstream) radio has no time for these (micro) details. They only talk broadly. For the poor this broadness has no meaning. They need (micro) experiences. Our radio can do this effectively. As we share these experiences we also get other women's (women outside the *sangham*, the village association of dalit women) support in the work that we are doing'.

> Pushpalata, Pastapur: 'Our language and their language are very different. We can't understand their language at all. They will never use our language. For e.g. I want to tell my fellow women not to stop eating green leafy vegetables during the rainy season. Only if I use our language and our imagery do people understand what I am talking about. But in the mainstream radio they won't use this language'.
>
> '.. The essential difference between the issues that our radio and the mainstream work on... We are talking about Saama and Sajja (some minor millets). We are always talking about marginalised grains, marginalised people marginalised language and marginalised issues. This does not interest the mainstream radio. This is the reason we should have our own radio to allow us to discuss our issues'.
>
> Chilukapalli Anasuyamma, Pastapur: 'In our *sanghams* (...) we are carrying on a number of tasks which used to be done by men. So also our men. They are doing a number of tasks which were only being preserved for women. This way we have been able to erase the boundaries between man's work and woman's work'.

'The mainstream radio is still steeped in the traditional gender roles. If we depend on it, we have to go back in time. All that we have done in our sanghams will come to a naught. If we have our own radio it can help us continue this progress we have made on gender issues'.

Women's Control over Technology

Control is a central element of women's empowerment - whether it is control over tangibles such as land, property, jewelry and other assets, or intangibles such as decisions made in the household or community or control over one's own body, sexuality and representation. In the information society, control becomes an important gender dimension, through women's ability to grasp, use and manipulate new technologies in ways that further their own cause. Women's control over technology can strengthen their identity, stimulate individual and collective action and bring about new and positive statuses and roles in the community. It is also an essential skill if feminists and women's movements want to influence the content generated and shared through ICTs so that such content does not reinforce violence against women and negative stereotypes in ways that the mass media have done so far. The examples highlighted below represent the direct use of technology by women in contexts where control over the production and use of the technology is 'normally' considered a male domain.

While most rural women may have seen a mobile phone, be familiar with the broad purpose of a mobile phone, and may even live in a household where a (male) family member owns a mobile phone, very few have themselves used it for communication and information seeking purposes. In Bangladesh, D.Net's Pallitathya Help Line project attempts to change this situation in two ways: at one end, by equiping and empowering young girls as 'mobile ladies' so that they can travel from household to household in villages and meet the information needs of women (and men) in these households on a wide range of issues, such as agriculture, livelihoods, health, legislation, etc.; and on the other end, by creating a Help Desk where female and male youth are trained to navigate a huge database on these various issues, stored in ICT-based systems, and respond to questions around rural livelihoods issues in a prompt and meaningful manner (Raihan et al. 2005).

The gender component in the project is very strong, in terms of recognising the empowerment potential of a young girl acting as the mobile operator in a context where rural women rarely travel outside their homes, tend not to seek information from external sources (particularly from males), and have very low usage of ICTs such as mobile phones due to affordability as well as cultural reasons. This is reflected in the impact of the project: around 50 percent of the callers in the four target villages are women, and the largest group of callers are housewives, who constitute almost 36 percent of all callers and are, according to D.Net, the 'most information-poor' (Raihan et al. 2005, 24). Furthermore, almost half of the questions raised are on health care issues, and the majority of these questions are raised by women. In fact, 14.2 percent of the female callers inquire about gynaecological issues according to a D.Net study of the project, which D.Net finds significant in a cultural context where women are reluctant to discuss issues related to their health and bodies with rural physicians who are mostly males (Raihan et al. 2005, 27-28). The mobile phone based solution also gives rural women some degree of anonymity in discussing issues personal to them.

The role of the mobile lady is central to the impact of the project

As Mobile Operator Lady was a female and moved door to door to assist villagers to share their problems with the Help Desk, women felt comfort to share their problems with another woman. Thus the unexplored problems of the women were captured under this project.

… the mobile ladies became not only a source of information, but also a trustworthy person, with whom they could share their problems. Any information received by the female users made them confident in dealing with various difficult situations.

Source: Raihan et al. (2005, 45)

In terms of their own empowerment, the 'mobile ladies' reported that their new role expanded their horizons, gave them the confidence to become tech savvy with other ICTs such as computers, and increased their status in the household as contributors to the family income. In turn, the D.Net study reports that the thorough understanding of the job requirements by the mobile ladies and their confidence in using the technology were key success factors (Raihan et al. 2005).

Another successful example of control over technology is the Government of Kerala's Kudumbashree project in India, where women from below the poverty line households are formed into community-based organisations under a poverty eradication programme of the government and opportunities are created for thrift, skill development and micro-enterprise. Amongst the hundreds of micro-enterprise activities that have been set up are IT units, which include data processing units on the one hand and computer manufacturing units on the other. In the latter category, women go much beyond their role as manufacturers: they are not only the owners of the businesses that they set up, but are also equipped to hold responsibility for the overall management of the enterprises and for all key decisions and innovations that need to be made to sustain the enterprises (Swamy 2007).

Manju S. on her involvement in the Kudumbashree project

Some women from our self-help group (SHG) were trained for six months. We took a loan from Canara Bank for Rs. 3.29 lakh (one lakh is 0.1 million), and each of us invested Rs. 1650 in the enterprise. We chose this area because there is more technology involved and we find it suitable for our education and skills background. Compared to non-IT enterprises, this is higher level work and the field itself is a dynamic one, becoming more important in the world.

My husband was not supportive initially, as I had to borrow money from our family to invest. I used to work long hours and didn't earn much income. Also, the workplace was very dusty and the work hours were long and tough. But now I earn almost Rs. 5000 a month and contribute to the household expenses. So there is no more opposition!

I was always interested in this field but I hadn't studied computers. There were no women in this field to serve as role models. And none of us had any prior experience. But we were interested and Kudumbashree supported us and trained us in hardware assembly. Some officers were willing to take a risk and give us work. Thus, we got started and were able to build our confidence.

We provide quality equipment at a low cost. Starting with a zero rupee turnover, we reached Rs. 10-15 lakh turnover in two years. Now, we are at Rs. 50 lakh and we aim to reach Rs. 1 crore (one crore is 10 million)! We also plan to concentrate more on advertising and marketing so that we can survive without Kudumbashree support.

Now, we have the confidence to carry on independently. We are the 'glittering stars' of the IT business. We are also very happy because we don't have to work for someone else - we are our own bosses. I am no more dependent on the extended family to meet my needs and household expenses. I have learned a new skill and earned an income of my own. I can achieve a lot of things.

Source: Interview with Manju S., Entrepreneur, Kudumbashree Project, Kerala, 2006

The benefit of this enterprise for women is that they can make a substantial income, either because they may not have many competitors (if the enterprise is located in a small town, for example) or because they are able to sell their products at a lower price than branded products regularly available in the market because of lower profit expectations (Swamy 2007). From a women's empowerment standpoint, these kinds of enterprises are of significant importance because they bring a new social status to these women and help weaken gender stereotypes. Women are not just employed as workers but make many key decisions about the enterprise, including how to improve product quality, how to expand the customer base, how much to reinvest into the business and how to diversify the business to meet broader needs.

Collective Action

For women's groups, collective action is a central element in bringing to the table issues that have been historically sidelined and in fighting for rights that women have been historically denied. However, the

main factors behind women's disempowerment are their social proximity to the source of oppression (within and beyond the household) and structural isolation as individual women located in these social structures of oppression. Self-help groups have been set up to create a forum for sharing and learning, in order to strengthen women's social and political identity as women and to collectively fight for and resolve issues that they face. ICTs can be a significant contributor to collective action efforts, by, for instance, creating online networks where women from different geographic locations can share, discuss and solve problems on issues such as domestic violence, rape, dowry, harassment and so on, as well as by directly helping women capture events through audio, video and photo recordings and use this 'evidence' to bring strength and legitimacy to their issues. Some examples of such possible empowering uses of ICTs from South Asia are presented below.

Banchte Shekha is an organisation in western Bangladesh with a membership of more than 20,000 women, working on issues of awareness generation, economic empowerment and legal aid (Bery and Stuart 1996). In 1991, two young women from Banchte Shekha attended a twenty day participatory video workshop organised by Communications for Change, and since then, several women have been trained in handling video equipment and using participatory video techniques. Once trained, they return to their villages to make video programmes on issues directly related to their own work and also lead community screenings of these productions.

> Clear evidence of the impact of the programme is Bulu, a woman whose husband deserted her and then tried to sell her. After attending the workshop, she made a video on the story of her neighbour Nasima, a victim of domestic violence. By filming the video in the village setting and screening it to community members, Bulu was able to clearly present Nasima's perspective to the villagers and prevent Nasima's in-laws from giving false testimonies in court.
>
> In another case of desertion, a report notes that 'the mere mention that Banchte Shekha planned to make a tape about a particular woman's experience motivated her husband and his family to negotiate a settlement. They didn't want to be embarrassed in front of their neighbours.'
>
> *Source:* Bery and Stuart (1996, 1)

The programme has given an elevated status to women like Bulu, who have not only gained from their technical knowledge on video making and editing, but have used video equipment to advocate for women's human rights and to strengthen women's voices. By putting their issues 'on camera', they have brought strength and legitimacy to their issues and have been able to create a platform to organise, act collectively and demand their rights from the government and the community. Thus, in a context where violations against rights of women are widespread and commonplace, and yet, are treated as though they are invisible and inconsequential, video has facilitated the process of social justice for women. Members report that participatory video is 'a valuable tool because it can make people conscious; when people can visualise, they understand. Video cannot be bribed, and it tells honestly our stories'.

In the past few years, the online world opened up by the Internet has also become a potential space for women to engage, learn, discuss, question and discover. The Blank Noise media project in Bangalore

(http://blog.blanknoise.org) confronts the issue of eve teasing, which Blank Noise views as sexual harassment on the street. The first phase of the project explored victimhood through the private identities of nine women, using video, sound and photographs. The second phase aimed at public confrontation, using street-based events, art and performances to bring attention to the issue of harassment and teasing that women deal with daily on the streets. An important component of this project is the blog maintained on latest issues, events and campaigns, legal information and FAQs on the subject, as well as a forum to discuss and debate on the issue. Participants include young women and men between the ages of seventeen and thirty, who are researchers, professionals, students, technicians and activists.

Institutional Transformation

One-off ICT-based solutions, while often adding cumulatively towards certain long-term impacts, may not be sufficient by themselves to transform deep-rooted structures and institutions of the society towards greater gender equality. In fact, 'IT solutions' that rest on market approaches to dealing with problems in governance and other development sectors such as health and education, can have disempowering impacts as they fail to take into account social accountability parameters. Placing IT solutions on top of a dysfunctional system in order to make it efficient and transparent will have limited impact if all those who are affected by the system are not engaged in the design, implementation and monitoring of the system. From a gender standpoint, these kinds of techno-managerial solutions in health, education, agriculture, governance and other areas may bring about social changes but may not further gender equality. It is critical therefore, to conceive of a more holistic approach to ICT-based transformations of public institutions, such that they strengthen women's rights as citizens and create new possibilities for gender equality and social justice. Two projects in South India highlight efforts in this direction.

Rural eSeva, an e-governance initiative in West Godavari District, led by the state government of Andhra Pradesh, is an attempt to bring good governance to rural communities, particularly women, by enforcing a high degree of accountability and transparency on the government machinery. The project hub, located in the district office, is staffed by government officials, while the eSeva centres are run by community-based organisations.[14] Out of the forty seven eSeva centres, sixteen are run by women's self-help groups and fourteen by members from disadvantaged caste groups. These centres offer a range of services, including the payment of public utility bills; provision of birth, death, caste and income certificates; information on public projects; and the handling of public grievance issues. The last of these, which has become extremely popular, is executed through an online service whereby the complete contents of the grievance as well as the follow-up communication and action on the part of the government are recorded permanently on the Internet and available for public viewing. A community media space has also been created, in which citizens can post opinions and pictures to bring local problems to the attention of the authorities. Over 13,000 grievances cases have been handled through eSeva kiosks, a significant number of them submitted by women, and some long-pending issues have gotten sorted out in a remarkably prompt manner.

Women have played a critical role in this project, not only by running and managing the centres but by positioning themselves as 'information leaders' within their local contexts, and have achieved an elevated status and better bargaining power in their local communities.

Women's role as information leaders in eSeva

The project visualised that lack of empowerment (for disadvantaged groups) is primarily due to information gaps and once the right access is ensured, a real change in the outlook of these communities can be made possible.

The unique thing about the rural kiosks we established is that they are run and managed by the women SHGs and have positioned the rural women as 'information leaders' to help bridge the gender divide. The women population in this district has previously been subjected to exploitation and comparatively inferior treatment vis-à-vis their male counterparts. The project therefore envisaged a strategy that can catapult the women's movement to a different plane and allow their evolution as information leaders. The aim is to help them act as change agents and makes it possible for them to grow in strength and stature with the project. As a result, women SHGs, trained to handle a computer and the processes which govern the entire project, have been positioned as information intermediaries and this helps in improving their relative bargaining power over the men.

The project exemplifies how big tasks are easily done if broken down into small doable tasks and assigned to various stakeholders. As far as citizens are concerned, the design of the project is demand-driven rather than supply-driven. And so, pressure from citizens will keep the administration on their toes and ensure the project's long-term sustainability. The project also establishes that women are next to none and can achieve desired results. By bringing in opportunities and prosperity to impoverished areas in the district, we have helped in the creation of a knowledge and information economy, wherein villages are knowledge hubs which can gain symbiotically from each other and derive benefits from the global networks.

Source: interview with Gangadhar Rao, District Informatics Officer, NIC, West Godavari District, Andra Pradesh, India, November 2006

DHAN Foundation, in the Indian state of Tamil Nadu, is an organisation that has been engaged in rural development and poverty eradication for many years (http://www.dhan.org). It has set up rural Internet kiosks to provide computer education, access to the Internet, information on locally relevant issues and telemedicine services. One component of the project is the use of video conferencing services to set up interactions between government officials from departments such as agriculture or veterinary sciences, on the one hand, and the local community, on the other hand, at fixed times every week. The telecentre's operator, who is a woman from the local community, plays a critical role in keeping the community informed about these sessions and in encouraging members of the community to participate in order to get solutions to their problems.[15] She also travels to district offices and local departments to collect information on schemes, services available and statistics that are relevant to the local community, as well as processes for the community applications for basic entitlements such as ration cards, birth certificates, pension schemes, etc. In this role, she attempts to set in place new processes that change the community's access to public information and services and help community members participate in agenda setting at the local level.

Radhika, Village Information Centre Operator, DHAN Foundation, Thiruvathavur, Tamil Nadu

I had completed tenth standard. My mother is an agricultural labourer and could not afford to support my higher studies. There was a DHAN centre nearby and the operator at the centre wanted to teach about computer hardware and software free of cost. I joined the centre and received training. I had never seen a computer before, except in pictures. Only after I joined, I touched a computer for the first time!

I assisted in training some students at the centre. I collected electricity bills from villagers and paid them at one shot. I got some 'jobs' from the neighbouring villages and assembled some computers. From all these tasks, I earned an income.

Then DHAN asked me to run a new centre in the neighbouring village. At first, I found it difficult to talk to people, but this gradually became easier. Now everyone knows me well. They now call me 'computer akka'! People find the services we offer useful. For example, if people want to get birth certificates, they have to sacrifice their time, pay bribes and all that. With us, they pay the correct amount and get it. We save people time. Also, while maintaining the quality, our services are cheap compared to other places. Right now I make Rs. 1000 from various services like teaching courses, data entry, video conferencing, astrology, etc.

I was shy initially. But over time, and with the encouragement of DHAN and the operator, I am even ready to talk on stage when I am nominated! There are difficulties involved in the job - people do not come immediately, we have to compel them. We have to tell them that if they want to contact the Panchayat (village self governance body) or other bodies, we can assist them and submit the details for them at the centre.

I am where I am today because of DHAN. Initially, my mother was not supportive because girls are not supposed to go outside the home. Now I bring Rs. 1500 home as income, which helps the family. Now, mother fully supports me. She is very proud of me.

Source: interview with Radhika, Village Information Centre Operator, DHAN Foundation, Thiruvathavur, Tamil Nadu, India, May 2006

Lessons Learnt and Policy Implications for Gender Equity

It is quite obvious that although each case study has been highlighted in terms of one of the four dimensions of empowerment - women's collective identity, control over technologies, collective action, and institutional transformation - there is, in fact, significant overlap between them. These aspects often represent a single continuum of women's empowering engagements with ICTs. Developing the capacity to control and use new technologies brings with it a new identity for rural women and changes their status in the community. Often, these technologies are used by women's groups to raise local issues or collectively demand entitlements and services from the government and thus engage in transforming those institutions

that have kept them subordinated so far. Therefore, while these categories are conceptually useful in order to develop an in-depth and nuanced analysis of the nature of the empowerment that takes place, it is apparent that at the field level, a carefully planned ICT project geared towards women's needs can simultaneously deal with multiple empowerment possibilities.

The studies also establish that an explicit and concentrated focus on women's needs and contexts, and on gender issues, is essential to achieving positive empowerment outcomes for women. In all the presented cases, the local women were involved from the initial stages of the project, and despite minimal or no literacy skills and, in some cases, no prior experience in the kind of work taken up by the project, women were able to successfully take on their responsibilities after some training and support from the organisation involved. In fact, these projects have often created a whole new identity for women in their community, highlighting the unique potential of ICTs to create a new space for pushing forth the gender equality agenda and improving the status of women.

A significant element to be pointed out in this regard is that the projects described above are far from the quick fix IT solutions - an approach that seems to be the dominant modus operandi in the ICTD field in South Asia. In all cases, the IT element built on an existing structure of women's self-help groups, or similar community structures, wherein group identity and the common goal of working towards gender justice is clearly established amongst the members. In this context, bringing about ICT-based innovations can have a catapult effect in pushing forward the women's empowerment agenda.

Finally, it is important to note that, while there are a few exemplary models from the South Asian region of innovative uses of ICTs to empower women, for a region that accounts for almost a quarter of the world's population these examples are few and far between. For structural transformation towards greater gender equality to take place, larger and more systemic efforts are required, and public policy in South Asian countries needs to be oriented towards this objective. Initiatives such as the ones highlighted in this paper have to be institutionalised, as NGOs can only prove or demonstrate empowerment possibilities in their local contexts, and then upscaled regionally or nationally. The role of the state and of public policy therefore becomes crucial on at least three levels:

One, there is a need for ICT policies that can ensure universal access to connectivity, software, hardware, content and useful applications, which form the very basic requirement upon which ICTs can then be used towards empowering outcomes for women. A private sector led ICT vision does not hold the promise to achieve this, and it is important for the governments to consider the 'public goods' provisioning of basic ICT infrastructure, covering all the elements listed above.

Two, public policy should support community-based ICT projects that experiment with and demonstrate possibilities for women's empowerment, and this should be done with participation of NGOs and community-based organisations. The imperative of doing so is established in all the cases discussed above. The local projects should be informed by a gendered analysis of social and community structures and be closely aligned with 'non ICTD' development activity. Using market-centred approaches to development and advocating business models in all development activity are unlikely to produce the desired effect of change in gender relations in society.

And last, governments need to have policy processes in place that learn from these ICT projects, and have a mechanism built in towards scaling up of these projects through their integration into their wider

developmental activity. This requires close cooperation between ICT policy bodies of the governments, that tend to direct ICTD projects; various sectoral departments like education, health, agriculture and so on; and national women's machineries that can provide the required inputs form a gender perspective to the entire process. At the very basic level, such an elaborate policy response to the ICT opportunity for women's empowerment can be kickstarted only if the governments of South Asia understand and acknowledge at an ideological and political level that the ICT phenomenon is much greater than mere celebration of the market, in the expectation that the market will bring greater export earnings and a few more jobs.

Endnotes

* The South Asian region consists of the following countries: India, Sri Lanka, Pakistan, Bangladesh, Nepal, Bhutan and the Maldives.

1 While the basic services referred to in this paper are electricity, water, education and health services, the same principles and arguments can be applied to ICTs, particularly, the Internet.

2 See, for example, Hameed (2006).

3 The explanations of all terms described in this section are based on the definitions of indicators provided in the 2006 UNDP Human Development Report, 'Beyond Scarcity: Power, Poverty and the Global Water Crisis'.

4 (note from the editor) Since the writing of this article, HIV prevalence estimates in India have undergone a significant downward revision as new, more accurate data has become available. Official estimates for 2006, released in 2007, put India's HIV prevalence rate at 0.36.

5 The data and the explanations of these indicators were obtained from the World Bank's 'World Development Indicators 'of 2006.

6 Lower middle income countries, as defined by the World Bank, are countries with a GNI per capita of between US$876 and US$3465, and include, for example, Brazil, China, Egypt, Indonesia, Morocco, Peru and Thailand.

7 The price basket for fixed residential lines is based on a portion of the installation charge (one-fifth), on the monthly subscription charge and on the cost of local calls (fifteen peak and fifteen off-peak calls of three minutes each).

8 The price basket for mobiles is based on the pre-paid price for twenty five calls per month, spread over the same mobile network, other mobile networks, and mobile to fixed calls, and during peak, off-peak, and weekend times. The basket also includes the price of thirty text messages per month.

9 The price basket for the Internet is based on the cheapest available tariff for accessing the Internet twenty hours a month (ten hours peak and ten hours off-peak). The basket does not include the telephone line rental but does include telephone usage charges if applicable.

10 The term 'dollar' is refers to the US dollar throughout this document.

11 In this paper, 'Rs.' or 'rupees' refers to the Indian rupee. One US$ equals about Rs. 45. A salary of Rs. 30-40,000 per month roughly equals US$ 10,000 per year.

12 See, for example, Bajaj (2006).

13 DWCRA (Development of Women and Children in Rural Areas) is a government of India community development programme.

14 Interview with Gangadhar Rao, District Informatics Officer, NIC, West Godavari District, Andra Pradesh, India, November 2006.

15 Interview with Muthukumarswamy B., Project Executive, DHAN Foundation, Tamil Nadu, India, 2006.

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Author Profiles

Mridula Swamy has completed her masters in International Development from American University, Washington DC, USA, concentrating on gender and economic policy. Her masters thesis was a gendered analysis of the impact of trade liberalisation in South Asia, focusing specifically on women employed in the garment industry. Mridula previously worked as a consultant with the International Center for Research on Women, USA, and, as a volunteer, at the network for Dalit Liberation, Chennai, India. In addition, she has been involved in a variety of research projects, including a transnational research study on the development of culture, self and identity among the South Asian diaspora in the United States, an ethnographic study of poverty and drug violence in Brazilian slums, and an economic analysis of the migration patterns of rural women working in the urban informal economy in Hanoy, Vietnam. Mridula has engaged in a policy research initiative for the UNDP on engendering ICT policies in the Asia Pacific region. She has also assisted in the analysis of a research study on the partnerships in health between NGOs and the government, being undertaken by the Indian Institute of Management, Bangalore. In Mahithi Manthana, an ongoing field level project undertaken by ITfC along with Mahila Samakhya, Karnataka, she has designed and coordinated the baseline research activities.

Angela M Kuga Thas, a Malaysian with a Bachelor in Economics and a postgraduate Diploma in Education, advocates for women's empowerment and non-discrimination. Angela draws her knowledge and experience from her networking and previous work with IWRAW (International Women's Rights Action Watch) Asia Pacific on the CEDAW, and with other organisations on women's sexual and reproductive health and provision of microcredit. Angela is a founding trustee of Knowledge and Rights with Young people through Safer Spaces (KRYSS), an organisation which aims to enable young people to deal with identity-based discrimination and creative arts in its training and activities. She monitors the local media on sexual discrimination with a small group of fellow Malaysians, and her qualitative research (2004) is the first to focus on lesbianism in Malaysia. As a member of the Association for Progressive Communications Women's Networking Support Program, Angela has been particularly active in gender and ICT policy advocacy and has fostered synergistic collaborations through the inaugural Gender and ICT Awards with the Global Knowledge Partnership (GKP), the Malaysian replication of the Women's Electronic Network Training, and the development of the ICT and gender e-primer for the Asian Pacific Development Information Program. Angela also conceptualised and manages the Seed Grant and Small Innovative Projects Fund of the GKP and is advisor to its Youth Social Entrepreneurship Initiative fund. Angela is on the Advisory Council of the Global Fund for Women and is a member of the International Advisory Committee for BRIDGE at the Institute of Development Studies in the United Kingdom."

Deborah L.Wheeler is a PhD in Political Science and Middle Eastern Studies from the University of Chicago. Her areas of research include information technology diffusion and impact in the Arab World; gender and international development; and the Palestinian-Israeli conflict. She has published widely on the Internet and its impact in the Arab World, including most recently a book, 'The Internet in the Middle East: Global expectations and local imaginations in Kuwait' (Albany: State University of New York Press, 2006). Dr. Wheeler taught for 12 years before joining the Academy, including positions at the University of Washington, Penn State University, University of the South, and Earlham College. Dr. Wheeler has extensive travel and research experience in the Middle East, including extended stays in

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Anja Kovacs is a feminist researcher and activist with fourteen years of experience in the field of gender, rights and vulnerability in research, teaching, advocacy and lobbying settings. Anja obtained her PhD in Development Studies from the University of East Anglia in Norwich, UK. Her dissertation focused on questions of agency and empowerment relating to women's participation in Hindu Right organisations in India. In addition, Anja has researched on issues relating to education, violence, political participation, employment, livelihoods and economic reform. She has conducted extensive fieldwork throughout South Asia, including in Afghanistan, Bangladesh, Nepal and India, and has also lectured at university in the field of gender and development, and has worked as an international consultant. Anja has been based in India since 2001. Currently, she is a Senior Research Associate with IT for Change, examining gender issues in the information society.