Locating Gender in ICTD Projects: Five Cases from India

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CHAPTER I: LAYING OUT THE CONTEXT OF THE RESEARCH STUDY

Positioning Feminist Politics within the Information Society

In all realms of society, it is widely asserted (and accepted) that Information and Communication Technologies (ICTs) bring with them greater efficiency as well as new possibilities for empowerment. Drawing from the business sector, in regard to which much analysis has been done in economically developed countries to study the effects of ICTs, findings suggest that ICTs are associated with increases in productivity and efficiency at the level of the firm, as well as lower transaction costs and rapid innovations (Pilat 2004). In fact, ICTs, like electricity, are considered as General-Purpose Technologies (GPTs), characterised by their pervasiveness and applicability across a range of uses, products and purposes; wide scope for improvement over time; and strong complementarities with other existing or new technologies and sectors, potentially spawning innovation in these other areas (David and Wright 1999; Jovanovic and Rousseau 2003). Looking beyond the business sector at the social dimensions of ICTs, it is often affirmed that these new technologies have similar potential to alter social relations and structures in a manner that they provide new opportunities for all sections of society.

The change *potential* may be widely agreed upon; yet, the *manner* in which ICTs effect change and impact various social, economic and political spheres of life, as well as the power relations contained within each of these spheres, is not so clearly understood. By and large, most developing countries have seen benefits from ICTs in terms of spillovers from the business sector to these other spheres, whereby the growth of private sector-led Information Technology (IT) and telecommunications industries is seen as generating more jobs, higher income levels and valuable foreign exchange. Most countries have rushed to wholeheartedly embrace the neo-liberal prescriptions of deregulation, privatisation and liberalisation in all aspects of ICT policy, with the hope that the unbridled play of free market forces in the sector will bring with it the aforementioned benefits. Poverty and inequality considerations are not given sufficient attention in this schema that adopts an approach that broader economic growth achievements (resulting from the ICT industry in this case) are good for the poor and, in general, “good times are good for women” (Dollar and Gatti 1999).

A modification of this conceptual approach pays greater attention to development concerns, by viewing ICTs not just as economic efficiency enhancers, but also as enablers of other activities, processes and innovations. From a development standpoint – what is referred to as the ICT for Development (ICTD) arena – the dominant thrust is in the form of extrapolating principles of the business sector to the social sector, such that ICT-induced processes become the major vehicle for furthering social change. Here, ICTs are seen as ‘tools’ that can be used to further efficiency, reduce time and costs, and spawn innovation in any development sector to which they are applied – health, education, social security, agriculture, and so on.

While both the above approaches provide a starting point to examine the impacts of new technologies on development, they do not adequately capture the far-reaching and systemic nature of the changes brought about through them. The fact that ICT “transforms, enriches and becomes an integral part of almost everything we do” (ISTAG 2006) implicates that it is much more than just a tool or enabler, and in fact, represents a new social paradigm – the information society

paradigm – in which structures, institutions and relationships are being reconstituted. Power relations lie at the core of all socio-political systems, and thus, a systemic approach to the information society paradigm that sees technology as embedded in existing systems and institutions, while transforming them, cannot ignore the role that ICTs play in potentially reinforcing and challenging power structures in society.

Power relations also lie at the centre of feminist analysis, which holds that the inability to make choices over one's own life reflects the lack of power to do so, and consequently, empowerment is understood in terms of "the expansion in peoples' ability to make strategic life choices in a context where this ability was previously denied to them" (Kabeer 2001, 19). This process of change, according to Kabeer, is manifest in three dimensions – human and social *resources* within various institutional structures; *agency* or the power to act and define one's individual or collective goals; and *achievements*, or the ability to achieve ways of being and doing (2001, 20-22). Power itself can be understood as the 'power within' individuals, in terms of their self-confidence, awareness, consciousness-raising and assertion in relation to their perception of how power relations operate in their lives; the 'power to' make decisions, take on leadership and solve problems; and, the 'power with', exerted collectively by those who share a common purpose towards a goal they seek to achieve (Oxaal and Baden 1997). Each of these kinds of power operate in different structures and institutions like the family, community and the public domain, and therefore, the strategies employed to challenge them need to be bottom-up, context specific and locally-defined, so that they enhance women's choices and further gender equality goals.

In development planning and decision-making, women's participation is considered an essential element in all spheres in order to confront power relations (as noted in the Beijing Declaration and Platform for Action). This requires an enabling environment in which laws, policies, resource allocations, rules, regulations, attitudes, practices and other institutional factors, are transformed in ways that present equal opportunities for both women and men. Furthermore, Kabeer (1999, 49) argues that in transforming institutions and structures, women's participation cannot be an individual effort (which can at best meet with limited success), but needs to go along with a collective solidarity effort in the public arena – wherein grassroots organisations advancing women's rights seek to enable women "to raise questions about forms of injustice that are taken for granted to such an extent as to appear natural, and to challenge forms of hierarchy that appear to be too deeply-entrenched to destabilize". The emphasis on the 'collective', however, has been lost in the mainstream development discourse that is engulfed within "entrepreneurial capitalism and market forces" as Oxaal and Baden (1997, 5) remark, leading to a de-politicised conceptualisation of empowerment that is "often envisaged as individual rather than as collective, and focused on entrepreneurship and individual self-reliance, rather than on co-operation to challenge power structures which subordinate women (or other marginalised groups)".

A politicised approach to addressing women's needs and claims rejects the passive provisioning of services and entitlements by institutions. According to Gaventa, this approach calls for a rights-based framework in which an institutional space is created for women to assert their rights and in which mechanisms to respond to these demands are set in place (2002, in Rao and Kelleher 2005, 68). Institutional change thus requires effort at both ends of the spectrum – in addressing demand-side changes that are embodied in women's voice, agency, assertiveness and collective mobilisation as well as changes in the supply side that would ensure that the broader enabling

environment/ opportunity structure responds and is accountable to the women's empowerment agenda. Further, change strategies must take into account the stated and unstated "rules of the game" that determine the allocation of roles, resources and power in various realms of society (Rao and Kelleher 2005, 66). Of utmost importance in this regard is the recognition that change at one level, such as in one's economic state, or in one realm, such as the household, may *not* lead to change in other levels or realms - thus, systemic and holistic change processes, that are inherently political in nature, are in order, if gender equality is to be achieved.

How does this analysis fit within the context of the emerging information society? ICTs may contain revolutionary opportunities to transform existing institutions, yet, it is important to interrogate how in reality ICTs are, or are *not*, 'empowering' individuals and groups within the information society context. Does empowerment here denote that which arises from greater efficiency levels and the ability of individuals, firms and communities to accomplish the same activities at a fraction of the time and effort previously required, itself creating new opportunities for all in society? Or does empowerment signify access, wherein mere, passive access to new and dynamic technologies by socially excluded groups is expected to bridge the 'digital divide' and eventually, the larger socio-economic divide? Are communities empowered through new information and communication opportunities that enable them to better avail health, education, social security and services? Significantly, from a gender equality angle, how do these forms of 'empowerment' correspond with the gendered dimensions of power and the analysis of social change processes and institutional transformation highlighted above? These questions need to be examined in detail, with specific relevance to the Indian context.

Exploring Existing Literature on ICT for Development in India

The Indian case is a good example of a situation where the advent of ICTs has been seen as hugely beneficial, resulting in the country being considered the most preferred global destination for outsourcing of IT and IT-enabled activities. This 'IT boom' has largely been in the form of the expansion of the IT industry – initially, the software sector that earns high export revenues, but now increasingly, other kinds of IT-enabled services – through a combination of strategies that involve the promotion of foreign investment in the sector, reducing tariffs and trade-related barriers, and providing tax rebates, subsidies and other incentives to investors in the industry. The net effect of these measures is that the Indian IT industry (software and other services) has grown by 33 percent in 2007, to become a USD 31.3 billion dollar industry that employs 1,630,000 people (NASSCOM 2007). This growth is impressive, but the question to be asked is how it has contributed towards poverty reduction, lowering inequality and creating social development in Indian society? There are limited studies on this aspect and the IT industry itself does not have any comprehensive data on the socio-economic profile of its employees. In this scenario, few surveys that have been undertaken report that those who work in this field come from middle class, privileged caste and urban or semi-urban backgrounds, and are largely men – concluding that the success of the IT industry in India lies in the fact that it "has been able to tap the existing social and cultural capital within the urban middle classes" and contrary to notions of merit and a level playing field, it has done little to contribute to "overcoming the deep social and economic divisions that continue to characterise Indian society" (Upadhya 2006, 202). With such a dismal record on diversity and inclusion parameters within the IT industry, it can hardly be expected that the gains realised from this sector transcend the foreign exchange earnings it brings in. Indeed, the "pattern and composition" of the sector's growth alongside other structural adjustments in the

economy may have worsened inequalities and increased the vulnerabilities of the poor and those in the informal sector, leading Sinha to conclude that:

> Massive changes in the role of public sector, shifts toward a technologically sophisticated service economy, informalization of the labor force, all create greater instabilities and insecurities in people's lives in the shorter and the medium term. If mechanisms for retraining, re-skilling, and adjustment are lacking then this insecurity can become a permanent feature of a working home's life as the workers go from one job to the next in search for stability. Furthermore, increased dependence upon the informal sector for employment has the direct affect of increasing the economic insecurity of those dependent upon it (2005, 22).

Poor women, who constitute the most vulnerable section of the population – due to their minimal access to assets and resources that would strengthen their position and decision-making power – are most likely to face the brunt of this economic shift. Women, by and large, tend to be excluded from technology training programmes due to male biases in the design, planning and implementation of these programmes – and thus, are also likely to face greater marginalisation and informalisation of work in the face of economic re-structuring. It seems, then, that the move to marketise, liberalise and privatise the IT sector, while empowering a thin slice of the Indian population that participates in it, may not do very much for the large majority of women in the country.

In the development spectrum, India is home to the largest number of ICTD projects in the developing world, covering a wide range of objectives, including e-governance programmes (extending across a spectrum, from simple transaction-based platforms to specific domain-based interventions in agriculture, health, etc), e-commerce projects, community media-based strategies, new institutional alternatives in development like telecentre-based enterprises and/or service delivery initiatives with a localised orientation (Paul et al 2004).[1]

Given that most of these ICTD projects are still in the pilot stage, or have only very recently been mainstreamed as holistic development interventions, the analytical frameworks to understand and assess them for their social impact are still nascent. The lens that tends to be used most often is that of a business model, where success and sustainability parameters are defined almost in terms of market integration and financial viability.[2] This is visible even in the recent Common Services Centres (CSCs) Guidelines laid out by the Department of Information Technology, Government of India (2006). On one hand, the guidelines emphasise the social commitment necessary in order to address rural development needs, but on the other, they state that the "success or failure of the CSC Scheme hinges to a large extent on the business and financial capabilities of the SCA,[3] as the

[1] The Digital Dividend report from 2004 reveals that of the thousand ICTD projects in their database, those from Asia constitute 36 percent of the total and within that, those from India account for 60 percent of the total.

[2] The origin of the fixation with a business model approach to ICTD projects can be traced back to the Digital Opportunity Task Force (DOT Force) Report of 2001. Conceived by the G8 countries as a means to lay down the development priorities of developing countries, and prepared by a committee which featured large private sector players, it pushed for a private-sector led, competitive business environment to create the appropriate infrastructure required in order to deploy ICTs for use by various sectors of the population. For a critique of the DOT Force Report, see Gurumurthy and Singh, 2005, 'Political Economy of the Information Society: A Southern View', WSIS Papers, available online at: http://wsispapers.choike.org/papers/eng/itfc_political_economy_is.pdf

[3] Service Centre Agency, or SCA, is the middle tier in the CSC Scheme, taking on the role of the franchiser in terms of owning and managing the CSCs as well as serving as the link between the village-level entrepreneurs and the state-level agency. For more

Scheme is not about rolling out IT hardware in rural areas, but building 100,000 rural businesses in hitherto untapped and unchartered areas of the country, besides promoting rural entrepreneurship and involving community participation" (2006, 3). A similar standpoint is echoed in studies that examine the impact of ICTD interventions in India, where key project characteristics like ownership, participation, management and sustainability come to be gauged under a model where maintaining profitability overrides all other considerations. Garai and Shadrach exemplify this in their research paper, stating that "scalability and sustainability of infokiosks depend on infokiosk's financing model, community affordability and overall economic situation of the rural society" and going on to add that the sustainability dimension "depends not only on the gross spending of rural citizens for infokiosks services, but also on the total customer size", where with "a favourable total customer size, the village community can sustain the infokiosk even with a low per capita spending for infokiosks services (2006, 38-39). Toyama et al. (2005) use the specific examples of Drishtee and N-Logue – two ICTD projects which are rooted in creating a viable business model in the provision of services to rural communities – to raise the question of whether "sustainability as a business" is possible in smaller rural economies, or even desirable, when the attempt is to use ICTs for the socio-economic development of the poorest communities.

Some studies have examined factors other than financial considerations that impact the implementation and outcomes of ICTD projects in India. Gurumurthy et al (2005) adopt an alternate lens of analysis, examining how factors – ownership patterns, appropriate technology and applications, the institutional interface for service delivery, and the interaction of national policies and local initiatives – all impact, and are impacted by, different models of financing ICTD projects in the country. In the case of n-Logue run franchisee centres in Tamil Nadu, they observe that "the applications, network of services, and the social processes and habits that are needed to be built for the Internet to reach its great potential in rural areas cannot happen in the short-term profit, commercially-minded environment of a private enterprise, where the entrepreneur only by profit, and a purely business outfit like n-Logue" (2005, 10). Contrasting this approach with the community-owned and community-service approach of DHAN centres in the same area, the authors conclude that the role of both community-based bodies and government bodies is critical in developing appropriate technologies that meet community needs and are embedded within socio-technical processes is critical. Examining the case of Rural eSeva in Andhra Pradesh, which attempts to deliver good governance through ICTs, they find that it is not connectivity models that matter in rooting ICT projects in rural areas, rather, there is a need for "building institutions, a social consciousness, a community culture and individual capacities required for delivering and receiving substantial values over the connectivity infrastructure" (2005, 18). While this approach may seem like "putting the cart before the horse" the authors conclude that they are vital for the value of the technologies to be realised by the community as well as for institutions to respond to citizens' demands (2005, 18).

Dossani et al. (2005) studied 9 projects in the country in 2004 and observed that the lack of penetration in rural areas and absence of village-wide impact beyond certain user groups is a result of several missing factors, such as: useful and relevant content, awareness amongst users, capacity and skills of the operator, power and connectivity and well-defined partnership expectations. In addition, they argue that ownership models in these kiosks tend to "crowd out more efficient models" as they do not encourage the use of the space for multiple, competing services and fail to

details, refer to the guidelines.

harness the strengths of the different stakeholders in managing the kiosks (2005, 6). Recognising the "public good" nature of ICT infrastructure, the authors call for a central role for the government in managing infrastructure and developing content mechanisms and for NGOs, private sector and local government taking charge of providing services and ensuring equitable access at the village level.

De (2007) explores supply- and demand-side stakeholders in 7 e-governance projects in India to understand the 'first-order' and 'second-order' effects of these projects. While most projects have achieved first-order effects of increased efficiency, lower corruption, saved time, and so on, the second-order effects in terms of "new arrangements and alignments made in the economy and in the lives of stakeholders" are not visible in most projects – which tend to be highly supply-driven – and furthermore, even first-order development impacts on women and *Dalits*[4] were insignificant in most of them (2007, 7). These findings are repeated in a gender analysis of e-governance projects of a specific state in India, Chattisgarh, where Saxena and Subramanian (2006) report that male bias exists in all stages of the project, from design and roll-out to usage and participation and that women's access and use of ICTD services is hampered by existing socio-cultural practices in the region.

Some studies have provided vital insights on the way in which ICTD projects embed themselves in the existing community context, and hence, how the outcomes of the project are mediated by the socio-political structures of that context. Warschauer (2002) dispels the simplistic notions implied in the concept of the 'digital divide', and studying the case of three ICTD programmes, illustrates that ICTs cannot be considered as tools that are injected externally into community settings to create results, but are in fact "woven in a complex manner in social systems and processes." Thus, issues of access to ICTs involve several considerations, where "the meaning and value of access varies in particular social context; access exists in gradations, rather than in a bipolar opposition; computer and Internet use bring no automatic benefit outside of particular functions; ICT use is a social practice involving access to physical artefacts, content, skills, and social support; and, acquisition of ICT access is a matter not only of education, but also of power" (2002).

Colle and Roman (2002) also use case studies from ICTD projects in developing countries to assess the factors necessary for building participatory community processes in telecentre design. They observe that there are various obstacles, including specific gender-related obstacles, that need to be understood first, and upon which mechanisms can then be set in place to generate community-defined content and services as well as to provide 'expert' information and content. Importantly, they argue that raising awareness of the role of the telecentre and mediating socio-cultural processes in the community are necessary in order to ensure that the ICTD intervention brings benefits to those who require them most. Debunking the 'demand-driven' approach to ICTD projects, they note:

> people most in need of a specific information or communication service may not necessarily respond to simple service availability. Applying a 'field of dreams approach'

[4] *Dalits* were considered as "untouchables" and therefore outside of the Hindu caste system and were made to perform menial jobs in society. Constituting almost a quarter of the Indian population, they continue to remain socially and economically deprived. The Indian Constitution refers to this group as Scheduled Castes (or SCs) and provides them with special provisions in education and employment, in order to overcome historical discrimination. Refer to http://ncsc.nic.in/ or http://www.dalitnetwork.org for more information.

> ("build it and they will come", or "put a telecenter and they will use it") is naive. And it can also be dangerous: our focus group research reveals how village elders and leaders act as a main source of information and communication, and if a telecenter ignores this tradition, it may bring power clashes and conflicts that hamper any ICT-enabled development initiative. This indicates the importance of raising awareness about the role of the telecenter, while also exploring every opportunity to sensibly *integrate* the telecenter in the existing local communication structure (2002, 11).

The study of socio-political power relations within community contexts has been explored in some ICTD projects in India. A study by Kumar and Best (2006) on the diffusion of telecentres within the community in the Sustainable Access in Rural India (SARI) project in Tamil Nadu, India,[5] observes a variety of factors that significantly impact use of telecentre facilities within a local context. Analysing age, caste, gender, religion, income, education and asset ownership of the kiosk users, Kumar and Best conclude that the profile of kiosk users is statistically significant from that of the overall village population, and, as expected, the kiosks have tended to serve the interests of the better-off sections (2006).[6] However, using a framework that studies the rate of adoption within a social system, they find that the role of the kiosk operator and of local champions in spreading awareness on the kiosk across community groups, the location of the kiosk, the affordability of services and the perceived complexity and (lack of) compatibility of the innovation amongst certain users (women, disadvantaged castes and non-literates) all played a significant role in determining whether the innovations were adopted by the wider community. Significantly, Kumar and Best revisited their findings two years later, to learn that almost all kiosks run by self-employed entrepreneurs within a business model had shut down, while those run by a non-governmental organisation in the same geographic area and fed by a common local connectivity provider were all still running, thus making the following conclusions about sustainability dimensions:

> The main reasons behind the closure of the kiosks being run by self-employed entrepreneurs were lack of long-term financial viability and lack of adequate operational and technical support by n-Logue, the internet service provider and organization responsible for coordinating with other entities for delivery of services. The lack of long-term financial viability was mainly due to the inability of the kiosks to diffuse widely within their communities and attract more users. As pointed out in this study, the kiosks continued to attract users mainly from the relatively higher socio-economic strata within their communities and failed to upgrade their content to make it more relevant to a wider section of the village population. On the other hand, the kiosks being run by the NGO received financial subsidies for them to remain viable and also introduced more and better

[5] The Sustainable Access in Rural India project, implemented by TeNet Group, MIT Media Lab, Berkman Center-Harvard Law School, I-Gyan Foundation and n-Logue Communications, is a demonstration project that seeks to invent and deploy "innovative and context-appropriate technologies, applications, and highly localized content that lead to economic and social development" and through this, create business models. To know more about the project, which was piloted in Madurai district, visit: http://edev.media.mit.edu/SARI/mainsari.html

[6] Similar findings are echoed in other research studies of ICTD projects in India. For instance, International Institute of Information Technology. 2004. '*Information and Communication Technologies for Development: A Comparative Analysis of Impacts and Costs from India'*; M.S. Swaminathan Research Foundation. 2002. '*Assessment of Impact of Information Technology on Rural Areas of India'*. Balaji, V., K. G. Rajamohan, R. Rajasekara Pandy et al. n.d. '*Towards a Knowledge System for Sustainable Food Security: The Information Village Experiment in Pondicherry'*. Also refer to Garrido, M. 2004. '*A Comparative Analysis of ICT for Development Evaluation Frameworks'* for an overview of the evaluation frameworks that have been used to study ICTD projects in India and other developing countries.

> services to attract more users. These findings confirm the main conclusions of this study and underscore the importance of making the kiosks diffuse more widely among their communities for long-term economic and social sustainability (2006, 130).

Institutions (and institutional constraints), inasmuch as they assist in understanding "how and why certain constraints are enacted and changed, who enacts and changes them", also play an important role in explaining diverse community experiences within ICTD projects (Parthasarathy and Srinivasan 2006, 6). Applying this understanding to the above SARI project, and using ethnographic research methods to analyse the project's 'success', the authors argue that while quantifiable measures may have deemed the project as a failure owing to its inability to generate income or benefits, ethnographic techniques reveal that the project, and in particular those centres run by women with NGO assistance, resulted in significant changes in the lives of women kiosk operators (KOs), by creating new roles and work for women, new networks with government officials and elites and new support mechanisms for the operators outside of their families. Deducing that "although neither changes to the architecture of service provision nor the efforts to create a market for services made an impact in terms of meeting the information needs of the communities, much less aid their economic and social development, there were normative changes in terms of the social status of KOs and in the definition of "acceptable" work for women", the authors conclude that ethnographic methods are critical to highlight "unforeseen shifts in social norms" created through the SARI project which may not have emerged in conventional research methodologies (Parthasarathy and Srinivasan 2006, 12). This is a vital finding in a gender analysis of ICTD projects in India, wherein the way in which success parameters are defined and the research techniques used to gauge them, may in fact, lead to either an over- or under-emphasis of the outcomes of the project on furthering women's empowerment and improving gender relations within the community.

Although some of the above project assessments reveal findings relevant to women's issues, very few assessments or case studies of ICTD projects systematically adopt a gender lens in analysing the underlying unequal gender power relations in the rules and practices of the community setting as well as in the larger structural and institutional contexts within which ICTD interventions have been initiated. Hafkin's (2002) analysis of six ICTD projects in developing countries is one such example, wherein a gender lens is used to understand how projects impact and were impacted by women's situation and gender relations in the local contexts, regardless of whether the projects claimed to focus on gender issues. The Indian case study specifically, of using Personal Digital Assistants (PDAs) to provide support and enhance efficiency and accuracy of the work of Auxiliary Nurse and Midwives (ANMs)[7] in order to improve the overall quality of the health care system, reflects a gender 'neutral' approach. No consideration was given to gender issues in the project formulation or design; no steps were taken to involve the ANMs or local community in the project planning; no efforts were made to mediate conflicts arising from those excluded from the programme (in this case, male health workers); and no mechanisms were evolved to collect data relevant to women's own health needs (for example, on reproductive tract infections, anemia, joint pains, etc.) which instead reflected the local patriarchal attitudes and the state's own health priorities of family planning and immunization. Thus, while there were some positive implications in the higher self-esteem and knowledge of the ANMs, Hafkin observes that ICTD projects can

[7] Auxiliary Nurse and Midwife (ANMs) are the field-level functionaries in the public health care system in India, aiding in the delivery of services, including reproductive health care services, to the community. For more information on the role of ANMs, refer to: http://mohfw.nic.in/NRHM/Documents/IPHS_for_SUBCENTRES.pdf

achieve much more on the gender equality and social development front if a gender lens is adopted from the design stages of the project and if the socio-cultural contexts of new technologies are clearly understood. Importantly, she argues that "targeting projects at women does not equate gender mainstreaming" (2002, 14) and so, special efforts need to be directed at identifying women's situation and needs and incorporating their participation within a broader understanding of the gender relations embedded in the local societal context.

Another study that systematically examines gender concerns, focuses on the case of the Akshaya project in Kerala in order to understand how gender dimensions and social relations are impacted within a 'gender-neutral' project framework (Mukhopadhyay and Nandi 2006). Capturing the ground-level experiences of entrepreneurs and e-literacy trainees in the programme to "assess to what extent the assumption of 'gender neutrality' was correct", they find that while the percentage of women entrepreneurs was low in comparison to their male counterparts, those who undertook this venture claimed that it had given them the opportunity to "make their mark in this area of business" and "raise their social standing in the eyes of the community" (2006, 40). Yet, gender issues in other spheres – lack of independent financial resources or assets, reliance on other women household members to undertake domestic responsibilities and lack of sustained support from male household members to help payback loans and manage the business aspects – were some of the reasons that strongly hindered women entrepreneurs in their ability to take advantage of the opportunity presented by the Akshaya project. The authors argue that gender sensitivity in the project design and ongoing steps by officials to discuss and tackle women-specific issues could have gone a long way in addressing such obstacles and correcting "gender imbalances on the ground", thus leading to "the process of social transformation that policy planners and feminists alike are avowedly looking for" (2006, 46-49).

While the above review of literature on ICTD projects is only representative of the larger set of findings that have emerged on the development potential of ICTs in India, it reveals that, in general, most studies tend to examine the economic potential and financial viability of ICT projects rather than their development and social justice implications. Consequently, majority of the studies give insufficient attention to power relations in the local context and how these mediate, and are mediated by, ICTD interventions. Furthermore, aside from a sprinkling of studies on gender concerns in ICTD projects in India (such as those above), the literature review also suggests a huge chasm existing in the understanding of the *comparative* experiences of interventions in India in terms of their impact on gender relations. There is a need to move beyond an assessment of numbers, simple notions of 'access' or 'putting ICTs in the hands of women' ~~and~~to analyse whether and how ICTD projects are able to bring about structural and institutional changes that further the objectives of gender equality. The present research study seeks to address this gap.

CHAPTER II: THE RESEARCH STUDY: APPROACH, METHODOLOGY AND STRUCTURE

The Analytical Approach to Studying ICTD Projects in the Current Research Project

The research study, titled "Operationalising Gender Sensitivity, Inclusion and Empowerment in ICTD Projects" has been undertaken by IT for Change for the National Institute for Smart Government (NISG).[8] The aim of the study is to research existing ICTD interventions on the ground to explore how gender-inclusive principles are, and can be, incorporated into ICTD projects. These interventions may or may not be specifically oriented towards gender-equality objectives; yet, the aim is to map their basic approaches and strategies within the larger development context and policy environment to conceptualise how these affect women's empowerment and gender equality outcomes. The study offers some new ways to position ICTD and women's empowerment and proposes an analytical model that can be used to assess ICT policy frameworks as well as project design, implementation and review along gender-inclusive parameters. Based on learnings from the initiatives, the study also attempts to provide recommendations for adopting a gender-sensitive approach to ICTD projects.

A fundamental premise of this study is that the operationalising of gender in ICTD projects is part of the larger development strategy of addressing the basic needs and rights of women. Proceeding from the earlier discussion of the information society context in India, the study comes at a time when some ICTD initiatives in the country have been operationalised long enough to shed light on policy imperatives for appropriate technology models and elucidate lessons in terms of fundamental development concepts of participation, inclusion, gender equality, citizenship, and so on. The lens used to examine the ICTD initiatives focuses on their development outcomes, in terms of achieving equity and social justice goals, and specifically seeks to employ gender as a *marker* of such an inquiry; looking at how approaches to gender equality connect with different development frameworks in ICTD to produce power shifts.

For the purpose of this study, ICTD frameworks have been typified across four approaches, based on the earlier conceptualisation of the role of ICTs in shaping the process of change. These approaches do not represent exclusive categories or types and a particular ICTD project is likely encompass elements of different approaches in varying combinations. Yet, the typologies represent an analytic tool for understanding~~to understand~~ the basic assumptions and orientations of ICTD projects and how these impact outcomes in terms of gender equality. The four approaches are

1. ICTs as a vehicle for market extension.
2. ICTs as efficiency enhancing tools for development institutions, including of the government.
3. ICTs as community-centred development tools that can be used to specifically address education, health, livelihoods, agriculture, and other goals.

[8] Visit: www.ITforChange.net and www.nisg.org for more information

4. ICTs as a new strategy for empowerment that can shift social power relationships and facilitate institutional transformation towards the realisation of rights of marginalised groups.

Each of these approaches and their development connotations are explained briefly.

The first type of ICTD projects, espousing the market paradigm, sees the role of ICTs in reducing information asymmetries, transaction costs and time, and increasing efficiency levels – all of which contribute towards correcting market 'failures'. By strengthening market systems, such as agricultural markets, ICTs are expected to enhance overall economic outcomes for all sections of the population. However, it is now well acknowledged that the efficiency gains brought in through growth of the market do not necessarily result in lowering inequality or furthering gender-equal outcomes at the community level, and may in fact deepen existing gender and social divides.[9] In the realm of ICTs, this means that the implicit assumption – that ICTs will enable individuals (particularly those from marginalised groups who have remained historically isolated from participating in the market-based system and reaping its 'gains') to have equitable access to, and benefit from, market integration – must be re-examined. This approach, with its underlying assumptions and gender blindness, is unlikely to create substantial gains for women and can possibly widen the development gender gap in the process of expanding the reach of ICT services. Thus, for the purposes of this research study, ICTD initiatives that fall under the market-extension sphere and are guided purely by economic principles have been excluded.

The second approach can be seen as an extension of the first, where ICTs are adopted into development institutions, including government sectors, with similar assumptions of enhanced efficiency. E-government services come under this ambit. Here, citizens (or consumers, as they are perceived in the dominant e-governance discourse) are expected to benefit through ICT-induced improved availability of and access to services, lower costs, more accurate information, greater transparency and reduced time and effort in obtaining services. Several examples of the second type can be found in India, where state and central government departments have taken on a variety of measures to digitise their activities and services.

The third approach is more *community*-oriented and development-centred than the second, which tends to be *institution*-centred. Here, development actors (state or non-government actors) who are already engaged in activities around education, health, livelihoods, agriculture, social security, water and sanitation and other social sectors, perceive ICTs as a means to better achieve their development goals. They may, for instance, use videos to provide information or facilitate discussion on health; use telecentres as a platform to provide simple information in relation to key legal problems and the recourse or redress mechanisms available; or offer tele-communication facilities so that communities can interact with district-level officials on schemes and entitlements, directly from their own village centres. The second and third types can be seen as overlapping with the 'ICTs as enabler' approach, in which new ICT tools provide additional value to the existing activities and functions of an organisation.

[9] See, for instance, Çağatay, N. and K. Ertürk. 2004. 'Gender and Globalization: A Macroeconomic Perspective', *Policy Integration Department Working Paper No. 19*, International Labour Office. Geneva.

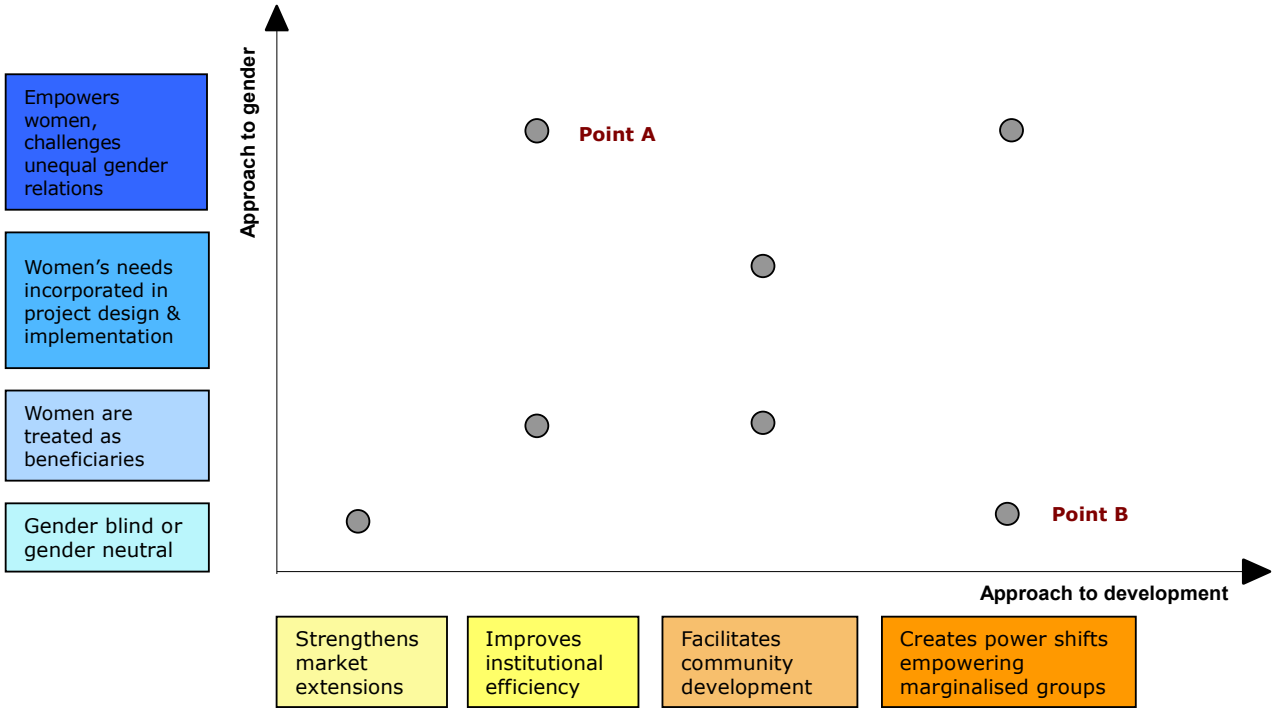
The final ICTD project type remains people-centred but goes beyond, seeing ICTs not just as contributing to or adding on to existing development goals but as holding new structural opportunities to address equity concerns and advance the rights of marginalised groups. Based on the view that the information society is a new social paradigm, ICTD projects of this type attempt to use technology possibilities to develop strategies that challenge and transform power hierarchies embedded in socio-political systems. While elements of the other types may be incorporated into this one, the focus of projects under this approach is not just on developing technology platforms and providing access to them, but simultaneously on strengthening the corresponding social processes so that these platforms are embedded within the realities of the communities, and hence, can be collectively harnessed by community groups to address their needs.

As already stated, these development approaches need not be mutually exclusive, as many ICTD projects exhibit combinations and variations of the above. Additionally, it is important to note that in any development initiative, the focus on gender can vary significantly. Some initiatives may consider their approaches gender 'neutral', not perceiving discernible implications for gender in their respective strategies. Usually, the premise of such initiatives is that communities are more or less homogeneous. Some may target women as beneficiaries – emphasising the number or proportion of women who have benefited; others may seek to identify and address women's practical needs creatively within the broader ICT strategy; and yet others may clearly promote women's strategic access to information, knowledge and communication opportunities. Some initiatives may seek to elicit empowering outcomes for women – outcomes that impact women's status parameters such as their access to intangibles like information, membership in networks and contact with officials or their control over public and private resources. In this manner, they may create a positive spiral of greater autonomy, participation and bargaining power in various spheres like sexuality, division of labour and political roles and leadership, ultimately leading to transformed institutional spaces where gender roles and relationships are re-defined in a more equitable manner.

Within the above ICT landscape, this means that gender outcomes in ICTD projects may take on several paths. For instance, an e-governance reform that uses ICTs to enhance efficiency in recording and addressing public grievances can have empowering outcomes for women by creating new opportunities for them to interact with officials and register complaints relevant to their struggles (Point A in Figure 1). On the other hand, a grassroots initiative that uses ICTs to facilitate a community's access to, and accountability from, health institutions may in fact be indifferent to gender concerns if it adopts a gender 'neutral' ICT strategy that may be reflected in a gender-insensitive approach to the location of the ICT kiosk or in the development of content provided at the kiosks (Point B).

Figure 1 thus represents a continuum that captures distinct assumptions about gender equality that are possible within each of the ICT development frameworks.

Figure 1: Plotting ICTD Projects along their Development Approach and Gender Focus



While the above diagrammatic representation provides a broad continuum of a project's development framework vis-à-vis its overall approach to gender, in reality, gender concerns may be addressed in diverse ways across different stages, levels and components of the project. For instance, the same initiative that adopts a gender-blind approach in designing the technology intervention may consider selecting some percentage of the operators as women, may take concentrated efforts to factor in women's needs in designing a health component for the project, or may actively redefine women's choices by providing critical information and linkages on issues such as domestic violence. Thus, the extent to which gender equal outcomes can be obtained in an ICT initiative depends on how an analysis of the gender opportunities and challenges is integrated and operationalised within the fundamental development approaches of the ICTD initiative.

Finally, a key area of exploration of this research study is in the gendered 'entry points' possible in, and adopted by, projects within their wider development framework as well as the trade-offs involved in meeting gender equality outcomes while fulfilling other project objectives. Such strategic choices can initially take the form of promoting women's leadership roles as telecentre operators; creation of livelihood options specifically for women through ICTs (e-commerce, hardware enterprises); e-literacy and e-learning to build women's skills; ICT-based networking so that women's groups can interact with each other as well as with external agents such as government departments, banks, businesses and NGOs, and so on. However, the study examines not just the manner in which these initial strategies or 'entry points' play out, but also ~~on~~ the *complementary social processes and institutions* that they are dependent upon – i.e., the larger policy environment (ICT policies and other social policies), the broader socio-political context including ~~of~~ women's rights and status and the immediate community context. Proceeding from the belief that operationalising gender sensitivity in ICTD projects – in terms of the stock-taking

and action required to map the benefits and risks as well as the challenges and opportunities for gender equality within projects and community contexts – cannot be a one-off activity, the study seeks to understand how these interconnected aspects interplay dynamically and impact interventions tactically so that they lead to gender equal outcomes.

Background, Methodology and Structure of the Research Study

Within the above framework of assessment, the research study examines five ICTD initiatives in India. The projects were selected based on their representation of the ICTD typologies, wherein:

Rural eSeva in West Godavari district, Andhra Pradesh, falls under the second type, where ICTs are used to increase efficiency in government departments and bring government services to rural areas;

E-Krishi within the context of Akshaya, Kerala, is an example of facilitating community development (third type), by establishing virtual and physical transaction platforms in agriculture and building the capacities of the agricultural community;[10]

DHAN Foundation in Madurai, Tamil Nadu, another example of the third type, illustrates how ICTs can be employed in serving as agents of change in rural areas by providing information, knowledge and training and strengthening networks and linkages of marginalised groups with external agencies and departments;

Self-Employed Women's Association (SEWA), Gujarat, with a long history of supporting the struggles of women and enabling them to demand their rights, has used ICTs within its existing strategies to better meet women's needs in the areas of health, livelihoods and self-reliance – also falls under the third type.[11]

Kutch Nav Nirman Abhiyan (or Abhiyan) in Kutch district, Gujarat, with the underlying belief in "information as a strong source of power, networking and advocacy", falls into the fourth type. ICTs are used to create new systemic and institutional forms of collecting and organising public information such that it can be made available to the community on a rights-basis and also used to strengthen the work of local self-government bodies;[12]

[10] As will be evident in the next section, E-Krishi is one of many applications made available at the Akshaya centres. While the case study revolves around this specific agriculture-based community ICT initiative, it is studied within the larger context of Akshaya centres, as it relies on the existence of the community-centred, broad platform that is closely tied with local-self government activities – that Akshaya centres provide – in order to have impact at the local level. Similarly, Akshaya relies on applications such as E-Krishi to be provided by the state and made available at the centres so that they remain vibrant, relevant and sustainable at the local level. Their symbiotic relationship implies that both projects' elements are discussed, sometimes interchangeably, in the findings and analysis sections.

[11] In the case of SEWA, two of their several ICT initiatives were studied – the e-commerce project through SEWA's Trade Facilitation Centre (STFC) as well as the telecentre project through village-level Community Learning Centres (CLCs).

[12] Similar to the E-Krishi case, Abhiyan's Mahiti Mitra kiosks are the delivery point of information and services relating to the development activities and local self-government strengthening initiatives undertaken by Setu information centres (described later in greater detail). Thus, while the project studies the Mahiti Mitra kiosks, it is again not possible to consider these separate from the groundwork of the Setu centres in undertaking fieldwork, raising awareness of the community, building capacities of various groups and collecting and analysing information. A similar symbiotic relationship exists in this case, where Setus rely on the Mahiti Mitra kiosks as the accessible dissemination point for their activities, while the latter relies on the former for information, services and community engagement.

A conscious effort was made in skewing the choice of projects towards those that embody the third and fourth types, as a central hypothesis of the study is that project approaches rooted in the paradigm of ICTs as a means to create structural changes – that can challenge power relationships and help realise the rights of the marginalised – are most likely to result in empowering outcomes for women and bring about lasting institutional change. This aspect will be discussed in detail in the concluding chapter. The selection of the projects was also balanced in terms of geography, scale, type of ownership – public sector or NGO sector – and the differences in their perceptions, the approach to gender and social justice, and so on, so as to capture a range of experiences from across the country. Given that ICTD projects take a considerable period of time to reach maturity and begin experiencing positive community outcomes, a requirement for selection included that projects were in existence for a minimum of two years at the time of study and continue to function actively today. As it emerged, almost all interventions were kiosk or telecentre-based – using computer(s), generic and localised software and applications as well as the Internet as the primary ICT tools, along with other 'offline' and community-based extension activities and services. The similarity in the kinds of technology platforms used allows for a comparison across projects in terms of how ICTs have been differently and contextually utilised towards social development activities.

The methodology adopted to study the projects includes references to secondary sources of data including publications, web searches, news articles, reports and evaluations, which were used to develop background knowledge of projects, frame project-specific questions, and contribute to the insights gleaned from field visits. The primary research technique is qualitative, consisting of field visits to project sites and extensive interviews, discussions and informal conversations with project representatives. Interviews were held in a mix of English and Hindi or the regional language and interviews were recorded with the permission of the interviewee(s).[13] In order to capture the diversity of views relating to each project, different levels of representatives were interviewed, from visionaries, implementers, field-level staff, technical experts, operators, community members to user groups. The questionnaires were tailored to these different groups, where for instance, visionaries were asked to elucidate on the theory of change behind the intervention, the choices in technical design and the lessons learned for policy action and institutionalisation; whereas the discussions with implementers focused more on actual challenges and learnings emerging from everyday practice and those with women operators of telecentres dealt with the impact of the project on their lives and those of women and other users in the community. As expected, the questionnaires served to stimulate discussion and provide a starting point, upon which project representatives built their own narratives and illustrations, and further open-ended and unstructured discussions were held to get a comprehensive picture of the intervention.[14]

The timeline of the research involved contacting project representatives, seeking assent and fixing dates for field visits in early 2007. The actual visits were undertaken between February and April 2007 and each project site was visited over a 2-3 day period. The field notes and interviews were documented in May 2007 and subsequently, a comparative analysis of the projects was undertaken, resulting in the current report.

[13] In a couple of cases where the interviewee was not comfortable with audio recording, notes were handwritten.
[14] Annexures 1 and 2 have details on the participants contacted for each project and the questionnaires prepared for different levels of project representatives.

It is important to state upfront that the data collection process of the research study contains several biases, some of which are highlighted here. To begin with, the projects themselves were not chosen on a random basis, but were based on careful balancing of multiple criteria in order to ensure a wider, and more generalised picture of gender considerations in ICTD projects in India. Within this ambit, the field visits were structured by project representatives, with some flexibility on the part of field researchers to determine which project sites they would visit and which members they would interview. With the limited time at each project, however, it is but natural that representatives chose field sites that were closer to urban centres and those which were more reflective of their own vision and accomplishments. Additionally, the interview process at the field-level was impacted at times by the presence and interjections of the project staff, and this, along with occasional language constraints, hampered the free flow of discussion with community members. The presence of men, either project staff members or our own field-research member, also had bearing on discussion of gender issues at a personal level with girls and women. And of course, the background profile of the field researchers – urban, young, middle class, educated and English speaking – coupled with our arrival at project sites with other project representatives and their introduction of us as individuals of 'importance', all had definite effect on the nature of responses provided by both community members and by higher-level project visionaries.

Despite the above constraints, each of the project site visits was extremely revealing and provided significant insight into the larger picture that the research study sought to investigate. The rest of this report is organised to present these insights within the context of the development approaches. The sections are organised as follows: Chapter 3 provides a background description of the projects, presented in a comparative format and based on secondary data as well as inputs from project representatives. Chapter 4 covers substantive findings specific to each project – in terms of the vision of change, the systems and processes, the outcomes, and reflections from a gender perspective – based on observations of, and interviews and discussions held with, project representatives during field visits. Chapter 5 presents conclusions and issues for future research and advocacy and attempts to develop a framework for operationalising gender in ICTD projects in India.

CHAPTER III: COMPARISON OF PROJECT APPROACH AND ACTIVITIES

This section presents an overview of the project studied in a tabular format, capturing details on various aspects such as initiation of the project, approach to development, the technical and infrastructure design, nature of ICT activities undertaken, key stakeholders, geographic coverage, selection and support of the entrepreneur, and community role within the project context. Going beyond a presentation of facts on each project, the purpose of this section is to outline the conceptualisation of the ICTD initiative along the above parameters in order to begin to understand the gender considerations within each of them.

The Initiation of the Project

Project	When and Why the Project was Initiated
Rural eSeva Kiosks	Initiated by the District Collector of West Godavari in 2002; 46 Kendras or kiosks running in the *Mandal* (Block) headquarters. Aims to provide rural citizens with services of different government departments through web-enabled kiosks. Also empowers self-help group (SHG) women, who run the ICT kiosks, become change agents in their communities through the use of ICTs in establishing knowledge hubs in rural areas.
E-Krishi with Akshaya	E-Krishi, a web-based portal, was initiated in 2006 in Malappuram district of Kerala. Aims at connecting farmer communities and other stakeholders through a space where information and interactive platforms are made available. The E-Krishi services and facilities are made available at the Akshaya centres. Akshaya was initiated in 2002 in Malappuram district (now upscaled to all of Kerala) to bring about e-literacy, widespread access to ICTs and local content, and bridge the "digital divide".
Abhiyan's Mahiti Mitra kiosks	Mahiti Mitra information hubs were set up in 2005. The main objective is to bring the benefits of ICTs to marginalised groups by serving as the focal point for all information relating to government services and local development needs. Mahiti Mitras are the front-end of the Setu centres, which were set up post-earthquake[15] in 2000 to provide a bridge between the government and the community, coordinate development activities in the region and improve self-governance by strengthening *Gram Panchayats*.[16]
DHAN's Thagavalagam	The SARI project (mentioned in Chapter 1) was initiated in 2001, where Thagavalagams or Village Information Centres (VIC) were set up. The objectives is to make ICTs accessible to the poor, facilitating socially relevant programmes and collaborating with institutions in order to reach a broad range of developmental goals. Young women are the operators of the VICs, facilitating their role as community mobilisers.

[15] The state of Gujarat was hit by a cyclone in 1998, which left 1173 people dead, 1774 missing and created damage estimated at Rs.1,865 crores (http://www.imd.gov.in/section/nhac/static/cyclone-history-as.htm). Again in 2001, the state was hit by another natural disaster – an earthquake – measuring 7.6 on the Richter scale and creating devastating impact (www.gsi.gov.in/quake.htm). It is estimated that almost 20,000 lives were lost and the damage caused was around 1.3 billion US dollars or approx Rs.5200 crores (http://cires.colorado.edu/~bilham/gif_images/2001Bhuj.pdf). As expected, the need for relief material and critical information was acute and it was in this context that the Abhiyan network was established.

[16] The Indian administrative divisions consist of: 29 **States** and 6 **Union Territories**, divided into **Districts** or Zillas, which, at the rural level, are further divided into sub-district structures called **Blocks** (also referred to as Mandals, Taluks or Tehsils). A Block is sub-divided into **Gram Panchayats** (sometimes referred to as Panchayats)**.** which cover one large village, or few smaller villages. and is the lowest administrative division in the country. The **Gram Sabha**, which includes all electoral members of that Gram Panchayat, is responsible for holding meetings to discuss, plan and monitor village-level development activities. See http://en.wikipedia.org/wiki/Administrative_divisions_of_India for a diagrammatic representation.

SEWA's E-Commerce and CLCs	SEWA's Trade Facilitation Centre (STFC) was set up in 2002 to enhance livelihood opportunities of women artisans and traders in the Kutch and Patan districts. STFC provides access to better markets and prices and higher sales turnover, thus converting micro trades into huge enterprises. At the village level, local producers link with the STFC services through Community Learning Centres (CLCs). CLCs also serve broader development and empowerment goals, through computer education, job placements, vocational training, and act as the central hubs for all SEWA's grassroots activities.

The above description clarifies the objectives and purpose behind setting up ICT initiatives. In all cases, the motive was to bring about community development and improve linkages with external institutions so that community needs are better addressed. Women's empowerment is an explicit objective in some projects either through women's leadership in managing the project or through their usage of information and services. While the specific initiative may be a recent development, all projects have been in some form of existence for a minimum of 5 years, carrying out broader development activities.

Technology and Infrastructure Design

Project	Technology and Infrastructure Design
Rural eSeva Kiosks	Space: Entrepreneur rents out a central space in the municipality and may be supported by the district administration in obtaining/ using the space. Connectivity: Provided by National Informatics Centre;[17] eSeva kiosks work offline and are periodically updated through a synchronisation tool with the district server. Hardware: Each centre is equipped with computers, UPS, modem, printer(s), web camera, lamination machine and electricity metre-reading device(s). Software/ Content: Windows OS and MS Office on computers. Specific and localised applications, developed by district National Informatics Centre (NIC), facilitate access to various services.
E-Krishi with Akshaya	Space: Owned/rented by the entrepreneur. Connectivity: Malappuram centres are connected through Tulip, a private data and telecom provider contracted by the government. The plan is to connect 100 percent of *Panchayats* through the State Information Infrastructure project, specifically the State Wide Area Network (SWAN).[18] Hardware: The centres have minimum 3-4 computers, printers, web cameras and other devices. Software/ Content: E-Krishi's web platform is developed in-house; Akshaya computers use Windows OS and MS Office; Linux OS will be made available through state government's recent policy to promote Free and Open Source Software (FOSS); content and applications developed by Akshaya team and Kerala State IT Mission (KSITM).
Abhiyan's Mahiti Mitra kiosks	Space: Abhiyan either establishes or rents a public space or sets up centres in *Gram Panchayat* office. Connectivity: All centres connected via BSNL[19] dial-up to the central network of Kutch-Link (K-Link), the technical *programme* of Abhiyan. Wi-Fi experimented in a pilot location. VSAT technology piloted in four centres.[20] Hardware: One computer and printer at each centre. Software/ Content: Various applications developed at K-Link: portal on government schemes and

[17] The National Informatics Centre (NIC), Department of Information Technology, provides network backbone and e-governance support to government bodies and "offers a wide range of ICT services including Nationwide Communication Network for decentralised planning, improvement in Government services and wider transparency of national and local Governments". See: http://home.nic.in/

[18] In line with the Government of India's National E-Governance Plan, "State Wide Area Networks are being set up to provide 2 Mbps connectivity up to block level with provision for wireless connectivity from the block level to the village level... Govt. of India support for the establishment of such infrastructure up to the block level will be provided by Department of Information Technology in accordance with the published SWAN Guidelines." See: http://www.mit.gov.in/default.aspx?id=82400

[19] Bharat Sanchar Nigam Limited, India's largest public telecommunications provider

[20] Very Small Aperture Terminal. See: http://www.isro.org/pressrelease/Nov05_2004.htm for more information on the use of the VSAT network in Village Resource Centres.

	forms in local language; Setu Information Management System (SIMS) with village database information; legal information portal; Global Information Systems (GIS) based decision support software; tracking software for Mahiti Mitra use statistics; and a K-Link information portal for internal email, discussions and information sharing. CDs and books on development topics are also available.
DHAN's Thagavalagam	Space: DHAN rents space in the village, sometimes in *Gram Panchayat* spaces. Connectivity: WLL provided by n-Logue through CorDect technology.[21] Some centres use Reliance connectivity. WiMax being used in coastal centres. Hardware: 1-2 computers, printer, web camera, Public Addressing System, MV audio recorders. Software/ Content: Computers use Windows OS. content and applications sourced from a variety of developers – ECKO[22], packages for health and educational materials, community databases, etc as well as library books.
SEWA's E-Commerce and CLCs	Space: STFC office in Ahmadabad is the coordination unit and is located within SEWA's larger trade union efforts. CLCs are located in spaces provided by *Gram Panchayat* or rented spaces in villages. Connectivity: CLCs are connected through ISDN[23] connectivity, ISRO's VSAT technology and Wi-Fi. Hardware: Several computers at STFC. At each CLC, 3-5 computers, printer(s), LAN, and scanners and cameras (as necessary). Software/ Content: 3 websites set up by STFC for receiving and processing orders. Also uses a Management Information System (MIS) for maintaining information on artisans, production times and order-related information. Artisans access the MIS through the CLCs. where Windows OS with Microsoft's Unlimited Potential Program, video content on CDs created by SEWA, other livelihood-oriented applications are available.

In the case of Akshaya, the space was rented or procured by the individual operator, while in DHAN, Abhiyan and SEWA, the involved organisation was responsible for acquiring or renting the space. *Panchayat* and municipality buildings served as locations for some centres. While the hardware used is roughly similar across projects, the connectivity models vary widely, from Intranet connectivity in eSeva to a combination of dial-up, WLL, Wi-Fi and satellite connectivity in SEWA, DHAN, Akshaya and Abhiyan. All projects used mainstream software platforms upon which localised applications were developed or purchased depending on the community needs to be fulfilled. Most centres hosted other resources, such as informational materials like books, video CDs, posters and newspapers, and a few sold items like spices, showpiece items, soft toys, question papers, and so on.

ICT Activities and Strategies

Project	ICT Initiatives and Activities
Rural eSeva Kiosks	Utility bill payments; issuance of certificates; online applications; SHG accounts maintenance; computer education; grievance filing, and marketing gateway for SHG products (the last two components were not functional at the time of research).

[21] CorDECT, a fixed wireless access solution developed by IIT-Madras and Midas Communications. See: www.tenet.res.in/Papers/cordect.pdf

[22] ECKO, or Empowering Community Through Knowledge, is a content-management system developed by Action for Agricultural Renewal in Maharashtra. For more about this application, refer to: http://ijedict.dec.uwi.edu/viewarticle.php?id=240&layout=html

[23] Integrated Services Digital Network

E-Krishi with Akshaya	Web-based information on crops grown, market trends, weather patterns, agricultural prices and inputs and related services are offered through the E-Krishi portal. Bhoomi Clubs of farmer groups and *Panchayat* members meet monthly at Akshaya centres. Akshaya centres offer E-Krishi services, soil testing, e-literacy for various groups; utility bill payments, Internet browsing and chatting facilities; Desk-Top Publishing (DTP); exam results; development CDs. Entrepreneurs undertake data collection and data entry on health and sanitation for government departments. Also provide other services like multimedia courses through their own initiative.
Abhiyan's Mahiti Mitra kiosks	Access to government forms, schemes, certificates; legal information, community database on GIS; grievance redressal processes; land data computerisation; training and capacity building of *Panchayat* officials; VSAT enabled interactive lectures on tele-medicine, tele-agriculture and tele-natural resource management; video CDs on development content. Other activities are centre-specific, depending on the local livelihoods activities.
DHAN's Thagavalagam	Computer education; e-literacy; issuance of certificates; online and offline content on education, animal husbandry, etc; DTP and job work; tele-conferencing on health (general, women's and veterinary health), information on agriculture, education and legal issues; community database information; browsing; training on fisheries livelihoods and disaster mitigation (coastal centres); inter-village news and information sharing (ECKO); public address and local news sharing. The centres provide services including computer education, employability skills, birth and death certificates, information on health, schemes and entitlements, local commerce and tele-conferencing.
SEWA's E-Commerce and CLCs	STFC use ICTs to facilitate processes and increase efficiency; MIS used to control entire order processing. CLCs provide computer training for literate and non-literate women; information and capacity building on education, health, livelihoods, skill upgradation, etc, sometimes using video CDs; village database information, data entry and job work. Some provide VSAT enabled tele-medicine, tele-agriculture and tele-natural resource management applications.

The above table illustrates the wide range of services being undertaken at each centre, from education and training on technical and non-technical issues, information provision, application for schemes and entitlements, expert guidance and discussion through tele-conferencing and community databases.

The Broader Development Framework

Project	Approach to Development
Rural eSeva Kiosks	The thrust is on convenient and efficient service provision to create accountable and transparent governance, and on enhancing citizens' access to government services and redressal mechanisms to bring about rural development. It also focuses on women's empowerment through the selection of SHG women as entrepreneurs.
E-Krishi with Akshaya	E-Krishi is primarily focused on agriculture, aimed at enhancing the marketability, productivity and quality of agricultural goods. Akshaya centres are a nodal point for wide-ranging government services and serve as a platform to meet development goals, such as education, health, etc. Surveys carried out by entrepreneurs on behalf of government departments assist in better targeting of government schemes and programmes.
Abhiyan's Mahiti Mitra kiosks	Mahiti Mitras enable "e-self governance", by increased citizens' access to their rights and entitlements at the grassroots level; strengthened local governance structures through training, computerisation of records, and facilitation of citizen interfaces; health, through tele-medicine and health camps; employment, through computer training, access to job information; and livelihood-specific information.
DHAN's Thagavalagam	Community empowerment through access to, and use of, information, as well as individual empowerment of the women operators. Canvassing in the villages by operators helps to gauge the community's development needs and encourage them to use services. Developmental objectives of health, livelihoods, agriculture and education are focused on at the VICs.

SEWA's E-Commerce and CLCs	STFC: For rural women's producer groups, income from their craft-related work is their only source of livelihood. Access to better markets, prices and design ideas, increased self-reliance and economic security. CLCs: The centres were the storehouses of village-related data, disaster mitigation, and so on in the post-earthquake scenario. They evolved to provide services contextual to local needs. Thrust is on employment, health, agriculture, credit and technical and non-technical education.

The ICT initiatives fit within a broad framework of development, covering areas of education, health, livelihoods, social security, and self-governance. Women's empowerment is a central or additional focus of some projects within the larger ambit of community development.

Geographic Coverage

Project	Geographic Coverage
Rural eSeva Kiosks	West Godavari district. eSeva Kendras at 46 *Mandal* headquarters (run by women from SHGs and by youth groups) and Rural Service Delivery Points (RSDPs) in 18 villages (all run by women). The target community includes all citizens who can benefit from a 'one stop shop' kiosk that provides services of different departments.
E-Krishi with Akshaya	E-Krishi piloted in 114 Akshaya centres of Malappuram district. Target includes farmer communities and Kudumbashree women's SHG units[24] that are agro-based. Akshaya centres, piloted in Malappuram, are being rolled out progressively in all districts by 2007, ultimately reaching all citizens in the state of Kerala.
Abhiyan's Mahiti Mitra kiosks	15 Mahiti Mitra centres are concentrated in the earthquake-affected region of the Kutch district; 4 sites identified for new centres. Agricultural labourers, fisherfolk and salt pan workers constitute the major constituency of Mahiti Mitra users.
DHAN's Thagavalagam	162 VICs and 14 coordination hubs (known as community colleges) in Madurai District and coastal districts of Tamil Nadu. The village community forms the target group of the centres due to the wide range of services offered.
SEWA's E-Commerce and CLCs	STFC works with women artisans in Kutch and Patan districts, with grassroots presence through the CLCs in these districts. The target community includes all members of SEWA cooperatives. CLCs were initially started in earthquake-affected areas. Currently there are 143 centres, each serving about 10-15 villages. The services at the CLCs are accessed by SEWA members and the broader community.

The geographic range varies in initiatives, with some like Abhiyan and eSeva covering a single district, and others, like DHAN and SEWA covering several districts in a state, or like Akshaya, covering the entire state. In almost all cases, the initiative may focus on specific groups within the community though the information and services are available for use by the entire population.

Key Stakeholders

Project	Key Stakeholders
Rural eSeva Kiosks	The District Commissioner (specifically Mr. Sanjay Jaju, who initiated the project); District Rural Development Agency (DRDA) and Scheduled Caste (SC) Corporation departments whose credit and other schemes were used to select and incentivise entrepreneurs; government departments which link their services to the rural eSeva centre; NIC, which provides connectivity, develops software, trains entrepreneurs in using software, troubleshoots technical problems, liaises between the entrepreneur and departments; the eSeva entrepreneur; SHG women and citizen groups who access the services.

[24] For more information on Kudumbashree, the poverty eradication programme of the Government of Kerala, see: http://www.sjsry-kudumbashree.org/

E-Krishi with Akshaya	KSITM; E-Krishi and Akshaya staff at all levels who design and implement the project; Bhoomi club members (farmers, agricultural officers, local officials); Kudumbashree agro-production units; businesses that benefit from aggregation of farmers and producers; *Panchayat* representatives who oversee the functions of the centre and channel departmental funds for development projects; the local community which benefits from the centres, especially women, who are major participants in the e-literacy campaign; and Akshaya entrepreneurs and trainers.
Abhiyan's Mahiti Mitra kiosks	Ms. Sushma Iyengar, visionary behind the Mahiti Mitra intervention; Setu representatives who strengthen local governance bodies and carry out activities for local development; Mahiti Mitra operators, who manage the centres and liaisons with the community; citizens and community groups who utilise services and facilities; *Gram Panchayat* representatives and district officials, such as the *Talati;*[25] community workers and paraprofessionals in health, education, Natural Resource Management, etc.; K-Link - the technical team of Abhiyan that provides all software and hardware support and training and coordinates with Setus to ensure that software development is sensitive to the community's needs.
DHAN's Thagavalagam	Mr. Vasimalai, the Executive Director of DHAN Foundation, is the lead manager of the VIC intervention; Mr. Muthukumarasamy and Mr. Premanand - manage project activities at the grassroots level, initiate, motivate and train operators; village operators who are young girls from disadvantaged backgrounds; user groups who monitor the operator's activities; *Kalanjiam* SHGs,[26] who generate community support for the VICs and use the facilities and services available; broader community including students, mothers, farmers, etc., using wide range of services.
SEWA's E-Commerce and CLCs	SEWA staff, who design and implement the programmes. STFC: artisans and producers at the village level; leadership class artisans who conduct quality control, determine price, and organise production; national and global buyers of STFC products; technical team. CLCs: Village officials who provide space and support; SEWA members who use CLCs for various purposes; women trainers who facilitate learning processes; community members who receive training and information.

As expected, each project had a complex range of actors who were involved in the planning, implementation, utilisation and monitoring of the project. Even within each of these roles, there were several actors. For instance, in E-Krishi, different aspects of planning were undertaken by the E-Krishi team in KSITM, Akshaya team at district and state level, and a coordination team at the district level which consisted of the Collector, the Principal Agricultural Officer, IT managers, and Directors of all agricultural departments such as sericulture, dairy, Krishi Vigyan,[27] veterinary health, and so on. Similarly, on the demand side, users in the projects included various livelihoods groups (farmers, artisans, fisherfolk, salt pan workers) and community members (students, school dropouts, homemakers, SHG members, elderly, widows, etc). Regardless of whether the project was run by the government or by an NGO, *Panchayat* representatives, local and district officials and government departments were reported as key players in these projects.

Selection of the Entrepreneur/ Operator

Project	Selection of the Entrepreneur/ Operator
Rural eSeva Kiosks	Entrepreneurs were selected under the schemes of DRDA and SC Corporation schemes. Preference was given to women who are members of SHGs, and about 30% of the centres are run by them.

[25] The *Talati* is the village-level revenue collector, who issues physical copies of land records, and therefore, wields significant power in the rural context.
[26] For more information on DHAN's Kalanjiam Community Banking Programme, visit: http://www.dhan.org/themes/kalanjiam.php and http://www.dhan.org/kcbp/frames.html
[27] Krishi Vigyan Kendras have been set up under the agricultural extension programme of the Indian Council of Agricultural Research (ICAR). See: http://www.icar.org.in/

E-Krishi with Akshaya	The emphasis was on choosing entrepreneurs from socially and economically weaker backgrounds, including women. The selection is in the hands of local-self government representatives. In the expansion phase, it has been made mandatory to have one-third reservation for women operators.
Abhiyan's Mahiti Mitra kiosks	The operator is chosen from the local community by the Setu team and is supported and trained by the Setu team. 4 of the 18 operators are women.
DHAN's Thagavalagam	Initially, the adolescent girls chosen as operators chosen were relatives of *Kalanjiam* members. Later, women (unmarried and married) from the larger village community, who received training in ICTs from DHAN, were also selected as operators. A telecentre operators are men.
SEWA's E-Commerce and CLCs	The CLCs are run by a team of women members of SEWA who are trained in ICTs. The leaders of the CLC oversees technical, developmental and coordination aspects.

A clear emphasis was placed in almost all projects to select an operator who came from a disadvantaged background and was best attuned to the needs of the local community and carried the spirit of service as well as enterprise. Women, especially young girls, were given preference, or explicitly selected in most projects.

Support and Training to the Operator/ Entrepreneur

Project	Support provided to the Operator/ Entrepreneur
Rural eSeva Kiosks	Entrepreneurs' technical skills are upgraded through periodic meetings, during which technical and other challenges are raised and dealt with. The Collectorate, in coordination with NIC, provides the services offered at the centre, while encouraging the entrepreneurs to innovate and offer services of their own. Connectivity is provided by NIC. All financial investments relating to the infrastructure are made by the entrepreneur, with some support from the government.
E-Krishi with Akshaya	Technical training, relating to specific services, as well as managerial training are given to Akshaya entrepreneurs periodically. Services are made available by KSITM, other government departments and local self-government representatives, the provision of which earns the entrepreneur an income or commission per transaction. New services, such as E-Krishi are provided conditional upon the meeting of social objectives by the entrepreneur. All financial costs are met by the entrepreneur, though the state assists in procuring materials at a lower cost and availing loans and also provides subsidised connectivity.
Abhiyan's Mahiti Mitra kiosks	The operator gets initial technical and social training, in addition to ongoing support and motivation from the Setu team, and is in turn accountable to the team. The team undertakes all information and communication processes at the community level. The services and applications are developed and made available free of cost by K-Link. Abhiyan bears the cost of the infrastructure and materials as well as a fixed salary to the operator.
DHAN's Thagavalagam	Most operators are first trained in ICTs by DHAN (hardware and/or software), and all of them continue to receive extensive support during the project. Social and managerial training is provided at initiation, along with periodic reviews and follow-up at the hub-level centres. DHAN carries out operator appraisals to facilitate peer-to-peer learning and also interacts with operators' families to build their trust. All costs relating to the centre - space, connectivity, services, applications, etc - are borne by DHAN, as is the operators' fixed monthly income.
SEWA's E-Commerce and CLCs	STFC provides complete support to the women artisans in terms of materials, design, production and quality checks, in using ICTs to monitor the production process, and in marketing of the products. CLC staff is provided technical and social training by SEWA staff. The operators also attend workshops and conferences for sharing and learning. Services and applications are made available by SEWA and all costs relating to the centre - space, resources and other infrastructure - are borne by SEWA.

While Abhiyan, DHAN and SEWA embody models where the complete investment in the centre is made by the concerned development agency and operators receive a fixed income, eSeva and Akshaya represent types where the individual operator makes the complete investment with some assistance from the concerned organisation. In all projects, initial training is supported by ongoing feedback and input, particularly to ensure that operators can handle new services, applications and content provided at the centre, and also to ensure that they can bring forth their challenges and issues and find solutions to these.

Community Participation and Role

Project	Community Participation and Role
Rural eSeva Kiosks	A large percent of the citizens, including women and children, use services offered at eSeva centres. Community members sometimes articulate their needs for basic services to eSeva operators, who attempt to meet them by harnessing the support of the project administrators.
E-Krishi with Akshaya	Akshaya's e-literacy programmes target every household and particularly women and children in these households. Other services cater to all citizens. The *Panchayat* plays a central role in monitoring the entrepreneur and in the kinds of services offered at the centre. In E-Krishi, the Bhoomi Club consists of farmer groups (who largely tend to be men) and SHG members of Kudumbashree (all women). Community representatives also participate in data collection on agricultural issues that feed into E-Krishi's programme design and planning.
Abhiyan's Mahiti Mitra kiosks	The community utilises the services provided at the centre as well as the information available on a variety of development topics. Computer training is provided for both local self-governance representatives and community members. Community-level data is collected (by community members) and analysed at the Setus, where decisions on the need to provide new services and content are taken. In some cases, the kiosk is located in a space provided by the community or the local self-government.
DHAN's Thagavalagam	Computer training is provided for community members (mainly children and youth), as well as other information and services relevant to the local population. The operators collect information on the needs and situation of every household in the community which is used to develop relevant services. User groups are created in each of the Thagavalagams, which typically include SHG women and other villagers, for monitoring the operators' responsibilities and ensuring that service provision is relevant and effective.
SEWA's E-Commerce and CLCs	CLCs: Technical training using various ICTs is provided for SEWA members and youth (girls and boys) from the community. Information sessions are also provided on health and livelihood issues and this helps with knowledge building and sharing amongst field workers and the larger community. The community, including local self-governance representatives, help in the selection of resource persons and in finding the location for the CLCs.

As these projects cover a wide range of development issues, it is not surprising that community members are actively engaged in their interventions as users of the services, content and applications. In some cases, community representatives play an important role in the collection of local information that feeds into the kinds of services provided and activities undertaken at the centre, as well as the kinds of applications developed by the concerned organisation. Local self-government representatives are also involved in capacity building, planning, monitoring and supporting the centre.

CHAPTER 4: EXPLORING GENDER SENSITIVITY: PROJECT-SPECIFIC FINDINGS AND REFLECTIONS

With the backdrop presented in Chapter 3 shedding light on broad aspects of the design and implementation of the five ICT initiatives, it is now possible to examine in-depth the findings that emerged from the case studies. In this section, each project is studied within its larger geographic, social, cultural, organisational and policy context to scope out how these contexts impacts the design, structure, implementation and outcomes of the projects with specific relevance to gender.

Rural eSeva Kiosks

Background: The Rural eSeva project in West Godavari came out of the experience of the Urban eSeva project[28] in the twin cities of Hyderabad and Secunderabad. While a typical Urban eSeva centre is a bill collection centre, in Rural eSeva, the delivery of a broader set of services was meant to be the central element, as many of these services do not have a direct revenue model. The centres were thus established to balance the concern of financial sustainability with the requirement of providing an array of development services to all sections of society, including disadvantaged sections. The aim of the project was to provide different government department services at a single point and place, with the understanding that a considerable number of these centres would be run by women or youth SHG members.

Vision of change: Mr. Sanjay Jaju, now Municipal Commissioner, Hyderabad, who is the visionary behind the project, feels that it is important to bring IT to the masses because "*Technology is a big enabler. It acts as a big leveler as it allows you to digitise records and do many other things. You cannot have a situation where people are expected to function without technology.*" The challenge according to Mr. Jaju was to do something unconventional, based on similar initiatives that he had experimented with in his earlier positions. He believed that rather than giving handouts to rural people, it was important to establish a new governance system using ICTs, which, "*with one single sweep… can remove the informational hierarchies which are there in the [government] system.*"

The idea was to roll out a project within a short time frame – two-three months from the initial conceptualisation of the initiative – and tap into existing resources within the system and in the community that would allow for the rapid roll-out. Thus, the DRDA and the SC Corporation were co-opted and placed in charge of selecting entrepreneurs under their existing schemes. Choosing these nodal development agencies had a positive impact in terms of selecting qualified entrepreneurs from disadvantaged backgrounds, who might otherwise have not been chosen to take lead in this innovation. Furthermore, in order to prevent conflict emerging from the power shifts caused by this new innovation and to build stakeholders amongst the power elite, the Collector "*got MLAs, MPs[29] and Panchayat representatives to inaugurate centres*." By placing the onus of the centres' advancement and monitoring in their hands, he was able to secure their

[28] To know more about Urban eSeva, visit: http://esevaonline.com/

[29] The Member of the Legislative Assembly (MLA) is the elected representatives of an electoral district while the Member of Parliament (MP) is the elected representative to the parliament.

cooperation. Yet, despite the authority of the Collector within the district, there was significant resistance to the initiative on the part of government departments and *Mandal* Revenue Departments, who were now expected to provide their services through the eSeva Kendras, or kiosks, run by community people – this change clearly meant a loss in the power exercised by government officials over local citizens and it also made corruption more difficult. Mr. Jaju remarks, "*Much handholding was required in the initial period and there were issues of buy-in from departments. I needed to suspend people and in one single day, I actually transferred 12 Mandal Revenue Officers. I had to do it*."

From the very beginning, women's empowerment was part of the larger goal of this initiative, and "*realising that the SHG movement was important,*" technical and entrepreneurial training was provided to them so that they would take the initiative forward and make it sustainable.

Systems and Processes: The Rural eSeva centre is run by an entrepreneur or a group of entrepreneurs from SHGs. The entrepreneurs do not receive any subsidies, but are linked to commercial loans to be able to initiate the project and purchase the necessary equipment and infrastructure. They receive computer-related training and guidance in management of the centre in the initial period for 6 months, followed by periodic meetings to get inputs on new services and discuss issues and problems. Building this level of ownership was important, Mr. Jaju felt. He added that if the project is to be sustained in the long term: "*Ownership is important because it needs to be sustained by the individuals. If I go away tomorrow, the centres should not die. There have to be monetary stakes to achieve this.*"

The selection of the entrepreneurs as noted above was left to certain departments, and those men and women who expressed an interest in the programme were short-listed and then selected. Mr. Gangadhar Rao, Chief Informatics Officer, NIC, narrates, "*In the beginning, there was a feeling that the entrepreneurs should be graduates who are better educated and therefore, in a better position to manage the centres. However, as time went by, it dawned on the administration that graduates would move on when they got better jobs, and so, the decision to take on SHG women to run the centres was in fact a better idea since they came in with a service motive and ensured stability to the centres from SHGs.*" The motive for choosing SHG women was also seen as strategic by Mr. Lav Agarwal, the current district Collector, who stated that "*in Andhra Pradesh, any initiative that involves women will succeed. The SHG movement is the driving force and it makes sense to build on their social capital.*"

Guidance and encouragement had to be provided in the initial stages to the entrepreneurs, many of whom had no previous business or technical experience. A project representative recounted an incident that occurred in the first few days of the project, where the actual collections for electricity payments from the villagers far exceeded the expected amount due from them. Upon investigating the specific kiosk where this took place, he found that the throngs of people waiting to pay their bills in the initial days had unnerved the entrepreneurs, who had quickly collected the payments without immediately issuing bills, in order to save time. Representatives had to recall all those villagers who had paid their bills on the particular days and re-do the payment process. They also trained the women on how to organise and manage large crowds of people without compromising on accuracy or processes.

One eSeva centre has been set up at every *Mandal*, or 46 centres in total, of which 14 have women as kiosk owners. The eSeva centres are equipped with computers, one or more printers and other peripherals like scanners, lamination machines, web cameras, etc., and all centres have hand-held devices for reading electricity meters and issuing bills. The kiosks are conceived as the front-end reception offices of the *Mandal* Revenue Offices, and the main services provided are in the form of utility bill payments and provision of certificates such as Birth Certificates, Caste Certificates, and so on. For each transaction, the entrepreneur is assured of a certain commission by the utility company. In the recent past, a revenue sharing agreement between the district administration and the entrepreneur has been developed, where a small portion of the earnings from each bill payment goes back to the district administration to cover connectivity and other costs. In some centres, entrepreneurs have the responsibility of reading electricity meters and issuing bills, for which they receive small amount per transaction and in all centres, information on district-level schemes, application forms for schemes, and results of district examinations are made available. E-literacy training courses for children, and of late, ICT-enabled literacy courses for SHG women have been initiated at the centres. Data entry for surveys undertaken at the *Mandal* level, for example, household surveys on Below Poverty Line households, is carried out by eSeva operators.

In the first phase of the project, a grievance redressal system was set up, wherein citizens could visit the kiosks, file their grievances into a system, at a fee of Rs.5, which the Collector would then monitor by securing feedback from the concerned officials. This ensured a quick and efficient process of grievance redressal and many women came forward to register complaints related to land ownership, availability of services, etc. This element, however, has not sustained beyond the tenure of the first Collector. Another project element, to support women's SHGs by establishing marketing linkages and using the eSeva centres as gateways to connect communities as well a physical space to display and sell goods, set up towards the end of the first Collector's tenure, has also not been sustained. This is despite an effort to brand select SHG products like tea, leaf plates, honey, *papads*, etc., and provide training to women on maintaining quality and standards.

There has been a further expansion in the project with 18 sub-centres run as Rural Service Delivery Points (RSDP) at the village level, all managed by women operators. As the main focus of these centres is on affordable computer education for children (in additional to utility payment collections), not all of them have been successful, where success is defined along financial sustainability terms. Efforts are ongoing to see how these "sick" centres can be sustained on a long-term basis in light of the fact that demand is much lower at the village level than at the *Mandal* level, and thus, alternate means of sustenance have to be conceived. Mr. Rao mentioned that NIC needs to develop other kinds of applications and content that are village-oriented so that the entrepreneurs there can benefit from the income obtained from these services.

The entire project is being administered by the Collector's office, in conjunction with NIC, which not only provides technical support but also liaisons with the different departments at the level of the government, and with entrepreneurs at the local level, to develop suitable applications. The representatives of the NIC feel that they are in the best position to perform this role as they have the "*domain knowledge of the district administration in addition to the required technical skills*." Furthermore, they visit the centres frequently and interact with the kiosk operators at meetings to provide the necessary troubleshooting and problem-solving assistance.

Outcomes: From the angle of financial sustainability, most centres at the *Mandal* level are functioning well and entrepreneurs have employed additional people to help with their operations. In two of the women-run centres visited for this study at Denduluru and Nidadavolu, the entrepreneurs, Ms. Nagashiromani and Ms. Venkatalakshmi, employ 4 and 1 additional people respectively, and earn a monthly income of between Rs.5000 and 8000, after paying off salaries and other recurring costs. In addition to the regular line of services, they sell non-ICT based goods and services (such as spices, groceries or show-case items) to augment their income. Aside from the financial success, there has been a change in the status of the entrepreneurs, who have moved from undertaking odd marketing jobs or working as agricultural labourers to becoming kiosk owners. Both women felt that when they were chosen initially, there was much skepticism in the community relating to their capacities to perform as IT kiosk operators and some gossip as the training called for frequent trips to the Collector's office for the 6 month period. However, once the kiosks were opened, these women, through hard work and dedicated service, were able to ensure that the kiosk functions in an effective manner. They strongly believe that they now command a position of visibility and respect in the community, especially in the *Panchayat*, which would not have been possible through their traditional roles and occupations. This is echoed by Mr. Jaju, who concludes that while there is a long period of struggle on both ends initially, once women entrepreneurs reach a certain point and establish themselves, there is no looking back. He notes: "*In Rural eSeva, it is the women entrepreneurs from SHG and SC groups who run their centres very well. I used to tell them that they are role models for other women. I wanted to establish a certain critical mass with escape velocity, so that you can't bring them back.*" He believes this strategy worked because, "*The power equations changed. In many cases women stood for elections and became Sarpanch (head of the Panchayat). It also helped generate a new SHG movement in terms of linkages. By the end of my tenure, NABARD-assisted loans[30] went up from Rs.60 crore to Rs.130 crore."*[31]

The positive spillovers of engaging women entrepreneurs is also reflected in the fact that 30-40 percent of the citizens who came to register online complaints through the grievance redressal mechanism were women, and these were complaints against non-delivery of services by the *Panchayat* representatives and officials in positions of power. Nagashiromani says, "*Had the centre been run by a man, women would not have come forward. It is because the centre is run by a woman that they feel comfortable*". This view is recognised by district officials as well. Mr. Jaju's belief on the 'escape velocity' impact of kiosk leadership on women's confidence and esteem is reflected in the entrepreneurs' response that they felt confident about diversifying and expanding their businesses in the future. And that even if government services and support were to terminate, they would sustain the activities of the centre.

Assessing the Project from a Gender Lens

Importance of the role of the visionary vis-à-vis project sustainability

There was repeated emphasis on the role of the champion or the visionary in pushing forward a project idea and securing buy-in from different departments and at different levels. This has its positive elements in that the project was kick-started within a short span of time (two months from

[30]National Bank for Agricultural and Rural Development, NABARD, is an apex organisation that offers credit and related services towards the development of agriculture, handicrafts, cottage industries and other rural economic activities. See: http://www.nabard.org/

[31] A crore in the Indian numbering system equals ten million.

conception) and created impact at the community level through the provision of a wide range of services under one roof. The onus of getting the different government departments to provide their services under a single roof fell on the shoulders of the Collector, who used his persuasive powers to secure the cooperation of all departments. Thus, while governments are slow to change and technologies may create a new set of opportunities to reform government systems, the success of an initiative like eSeva relies on an innovative and enterprising approach, backed by strong visionaries who come from positions of considerable power and importance.

The question remains, however, of how robust the project is in withstanding changes in leadership once it has been rolled out. ? While the representatives of the project felt that they had been able to sustain and strengthen the project post Mr. Jaju's leadership, there were certain elements that had weakened. In particular, as mentioned earlier, were the grievance redressal portal and the plan to use the eSeva centres to strengthen market linkages for products produced by SHG women. Grievance redressal, which may appear to be a simple application of recording complaints, actually has very deep systemic implications in its potential to unearth various corrupt practices in the government as well as to bring to light the lack of capacity of the state in meetings the legitimate and rightful demands of its citizens.

But the lack of institutionalisation or upscaling of projects elements such as this was considered an inevitable (negative) outcome of changes taking place at the visionary level – as reflected upon by Mr. Lav Agarwal, in his definition of his role in the sustainability of the initiative. He remarked, "*Mr. Jaju's goal was to build IT for the masses and use IT for a change. My job is to ensure that the project doesn't die. I have taken up different battles… because any project that is owned by the Collector will not succeed. Any project owned by the community will. And we have worked with the community [to bring about some level of ownership]*."

Thus, while the few women kiosk operators have attained "escape velocity" in terms of their position, status and opportunities and while the community has bought into the initiative and began to exercise demand for the development services provided, the study raises interesting questions on which elements of a project are likely to be sustained and which are likely to die out when the leadership changes at the top levels. Interestingly, in this case, both the elements that fizzled out – the grievance redressal system and the strengthening of market linkages – held significant impact from the standpoint of gender. It seems then that the gender agenda, being a highly contested one, and requiring a major push from the top levels in order to secure buy-in at other levels of the government as well as from the grassroots community, faces the threat of dilution in the absence of a sustainable vision that cuts across individual leaders.

Gender as a practical solution or a strategic agenda

This project attempts to provide an end-to-end IT solution and through improved efficiency and transparency in the government sector, benefit all sections of the community. Interestingly, integrating women into the project was found to be a useful strategy to ensure successful outcomes, as it was felt that women operators are more likely to stay in the position for a longer period of time and are more dedicated to serving the community. There was also a reference to the fact that the project hinged on the successful emergence of the SHG movement in the West Godavari District in Andhra Pradesh and the social capital built on by the movement. Yet, despite the lack of attention given to gendered nature of power relations in the community, the project was

able to develop and establish new role models for women entrepreneurs, and through its range of services, provide some new opportunities for women in the community. For example, it was mentioned that more women come forward to pay monthly bills and apply for certificates after eSeva centres have emerged as these were more accessible and convenient. These tasks were earlier seen as part of the 'male' domain because they called for standing in long queues, traveling to different offices and interacting with the power elite.

Project implementation trade-offs

Where IT projects attempt to bring about governance reform and challenge the power held traditionally by elites at official and community levels, projects have to confront trade-offs in defining parameters of success in their design and implementation. This was evident in eSeva, where the choices of creating stakeholder interest and bringing in maximum buy-in from different departments and officials by allowing *them* to choose the 'beneficiaries' under their different schemes, meant that certain other agenda – ensuring greater ownership of centres by SHG women and those from disadvantaged caste groups; securing the cooperation and involvement of local *Panchayats*; and setting up processes for wider community participation – all had to take a back seat. Also, the need to get the project running in an extremely short span of time so as to prove the possibilities of IT in a large-scale project meant that other processes dealing with the information and communication context, and power relations embedded within this context at the community level, had to be hastened or sidelined.

Business models may come in the way of development goals

The twin goals of the project were to provide the most cost effective technology solutions and ensure that the service delivery person makes a decent income through the kiosk operations. In this regard, the project was found to be sustainable as new applications and new uses of existing devices and processes are still being evolved by the eSeva implementation team. Yet, in the extension centres at the village level (RSDP centres), the inability of the centres to generate sufficient income to offset monthly expenses, due to the lack of a demand pool at the village level, led to them being considered as "sick centres" in need of alternate strategies and services. While financial sustainability is important, making this a concern that overrides other development goals is problematic, particularly when there may be several intangible ways in which women entrepreneurs are benefiting through their new roles, statuses and opportunities and women users in the community are benefiting from the newly available information and services. Conceiving of sustainability in a narrow manner also crowds out the possibility for appropriation of technology by community members, whose needs may be completely sidelined in light of the urgency of financial viability – thus, goals of reach, inclusion and service delivery may be negatively impacted in the process.

E-Krishi within the Akshaya Project

Background: The Akshaya telecentre model, according to Mr. M. Sivasankar, former Director of KSITM, was born out of two imperatives. One was the feeling that "*because IT parks exclusively focused on IT, there was no focus on rural communities*. *There was a need to make ICTs an inclusive tool as far as possible. In the eighties, there was a move towards setting up a computer in every rural library, since Kerala has a good network of rural libraries which are frequented by a large number of people. Thus, there was an excitement towards this new technology and even*

though the scheme did not succeed, there was a realisation that this fascination with technology combined with the latent demand could be used to make ICTs as an enabling tool." In addition, the second imperative, he explained, was related to the particular context of Malappuram district, where "*nearly every family has a member working in the Gulf Area. In the late nineties, there was a move by the United Arab Emirates to enact a law which would make it compulsory to give preference to locals for employment purposes, especially for unskilled labour. This led to a feeling that a lot of Indians working in these positions would lose their jobs and would have to return back home. The request for Akshaya centres, which came from the Malappuram district administration, came with the hope that these centres would be nodes of employment and upgrading of skills for those working in the Gulf region."* These two situations, Mr. Nair clarified, led to the "*genesis of the Akshaya project."*

Presently, there are 350 Akshaya centres in Malappuram, of which 15 are run by women entrepreneurs. The project has been expanded to 7 districts as of 2006, with the remaining 6 districts up for expansion by the end of 2007. In the expansion phase, a quota of one-third has been set aside for recruiting women entrepreneurs.

E-Krishi, an application in the form of a web portal, was piloted in 2006 in 114 of the 350 centres in Malappuram district (of which 4 are run by women entrepreneurs). The aim of the project is to connect farmer communities through the online portal, supplemented with a physical arrangement, in the form of warehouses, quality assurance labs and physical markets. At present, the initiative is limited to the online transaction platform. Three institutions are involved in running the application: KSITM, the Department of Agriculture and the Indian Institute of Information Technology and Management, Kerala.

Theory of Change: The project envisioned the use of ICTs to bridge the digital divide initially through an e-literacy programme that would enable citizens to use ICT for e-empowerment and knowledge development. The idea according to Mr. Salim, District Secretary of Akshaya in Malappuram, was to develop ICT access points in the form of Akshaya centres in each village that would serve as "*the permanent local service provider of all government services*." Integrating the efforts of other organisations and groups, these centres would be run on a social entrepreneurship model, where income generation would go hand-in-hand with a strong service orientation. To achieve this twin-fold balance, the government developed a model of providing subsidies for the various services it makes available at the Akshaya centres – for example, in the e-literacy initiative launched at the initiation of the project, the cost of training was subsidised by the government, such that Rs.120 of the total fee of Rs.l40 per individual was provided for by the government, and the remaining Rs.20 was paid for by the individual. In this manner, the government was not only able to ensure that the entrepreneur earned a decent income, but was able to meet its social policy objectives. Local self-government bodies were to play a critical role in establishing and monitoring the project, selection of the entrepreneur and securing community participation.

In the case of E-Krishi, the initiative envisaged the use of a web-based platform to facilitate agricultural business development by creating better information and transaction structures. Through the use of ICTs, the project attempts to aggregate agricultural markets, improve the bargaining capacity of farmers and provide inputs that would enable better decision-making and improved yields for farmers. Importantly, Mr. Anvar Sadath, Manager, E-Governance Cell,

KSITM, notes that the model rests on the need for an existing implementation mechanism at the village level, and this is where Akshaya centres serve as the arm for coordination and dissemination.

Setting up new systems and innovations such as Akshaya and E-Krishi meant that the gender perspective was completely sidelined from the broader theory of change. Within Akshaya, representatives at multiple levels reported that while the project was aimed at community development and enhanced service delivery, there were no elements to engender the project or cater to women's specific needs through Akshaya centres. This perspective carries through in E-Krishi. Mr. Sivasankar remarks about Akshaya that "*no conscious systemic preferences were given for the underprivileged and women*" and within the E-Krishi context, Mr. Anvar comments that "*the nature of the application is such that we cannot distinguish between men and women."*

Structures and Processes: In the Akshaya model, an individual entrepreneur owns the centre, making all the investments in the initial period towards the infrastructure and space and holding responsibility for the successful operation of the centre. The *Panchayat* wields considerable authority over the entrepreneur, who is accountable to the institution in ensuring service delivery. This implies that while the Akshaya model provides opportunities for the entrepreneurs to earn a decent income, they need to be guided by the motive to serve the local community and function within the authority granted by the *Panchayat*. As Mr. T.K. Manzoor, Director, Akshaya, states, "*They are social entrepreneurs, having both entrepreneurial qualities and social responsibilities. For this balance to be maintained, the local self-government bodies need to be involved at the local level*." Dr. Peethambaran, Virtual University for Agricultural Trade, adds that entrepreneurs "*will be disqualified if they don't follow guidelines and regulations*" and the government maintains control over the range of services provided to each centre based on fulfillment of social obligations.

Explicit considerations for gender equality were absent in the selection of entrepreneurs. Mr. Sivasankar explains that, "*the way the project was structured, it was decided that all other things being equal, the choice of entrepreneurs would be given to women or to [those from] other weaker sections of society. Though this was considered, what is also true is that we did not have a specific bias towards choosing women entrepreneurs."* This was echoed by Mr. Salim, who said that "*as it was a pilot project, no particular criteria was laid out. All were invited to participate. And as the initial investment was heavy, we had to get healthy entrepreneurs*."

The centres offer a variety of services. In the initial period, the project was focused on making one person in each household e-literate; since then, several other programmes and services have been launched at the centre. The activities at the centre include other kinds of e-literacy programmes, such as "Internet to the masses" (for the general population), e-Vidhya (for the student population) and more recently, a scheme aimed at computer education for Scheduled Caste girls in 8th-10th standards; utility bill payment (for which entrepreneurs get a commission); information provision on health, agriculture, education, legal rights, and so on; and e-governance services including online applications and processing; communication and entertainment services. In addition, the entrepreneur may take on survey administration, data collection and data entry for government departments, which aids in better implementation of the corresponding schemes. Also, Akshaya centres serve as a space in which activities – both online and offline – geared towards different

groups like students, farmers, women, and so on, are facilitated with support from the entrepreneurs. Content and services for the centres are made available by the Akshaya project staff, KSITM and other bodies and are provided conditionally, upon fulfillment of social service obligations.

While there are very few women operators, in Malappuram district, women constitute the bulk of the users – 70 percent of the e-literacy programme beneficiaries are women and 58 percent of the master trainers at the Akshaya centres are women, as are majority of the social animators, who assist in project implementation. This is in fact widely noted by project representatives, justifying the lack of a gender-sensitive project design that would ensure women's leadership and participation. Yet, bringing women to Akshaya centres was no easy task in the Malappuram context and required hard work and innovative efforts on the part of the entrepreneurs. Ms. Sajina, an entrepreneur of Marakkara *Panchayat*, who has trained around 1200 people through the e-literacy programme, of which 450 are women, narrates: "*A major challenge I faced was that women would not come to the centres for the e-literacy programme. Even though I was a woman, it was simply unheard of for women to leave their homes and receive this kind of training. Through my own innovation, I decided to take the computers to Anganwadis*[32] *and Madrasas*[33] *to impart this programme and ensure that a larger section of the population benefited.*" After this initial effort, the outlook of the community has changed. Now, she notes, women, especially those who want to pursue higher education, come to the centre to look for information over the Internet. Similarly, Ms. Meera, an entrepreneur at Tirur, recalls, "*Given the background of this place, it was imperative for me to go door-to-door to encourage women to come forward and participate in the e-literacy programme.*"

In E-Krishi, the initiative began with the collection of data by Akshaya entrepreneurs on crop cultivation, land-holding patterns and yields. The data is updated on a regular basis to facilitate analysis and planning by the E-Krishi staff, and the entire process is facilitated through Akshaya centres. At the district level, there exists an E-Krishi coordination committee, with the Collector as the convener, and includes the Principal Agricultural Officer and Directors of all agricultural departments like sericulture, dairy, etc. They deliberate on the strategy to be adopted at the district level.

Additionally, a Bhoomi Club comprising of farmer groups, the agricultural officer and E-Krishi staff is formed in every *Panchayat* and supported by *Panchayat* officials. This club brainstorms on various aspects related to implementing and training on E-Krishi. Each centre also has a field-level staff person who moves from village to village, gathering information from farmers, increasing awareness on E-Krishi and coordinating efforts with the Akshaya entrepreneur. Farmers attached to the 114 E-Krishi integrated Akshaya centres may use the online portal, register themselves free of cost and then post details regarding their products on the portal. They also post queries with respect to any agricultural issue, which are answered by experts. There is a detailed incentive scheme in place for the Akshaya entrepreneur who facilitates agro-business transactions through the web platform. For instance, if the entrepreneur is able to secure a single transaction of over Rs.100,000 through the E-Krishi portal in one month, a monetary incentive of Rs.1,000 is given.

[32] Anganwadi centres are childcare and mother-care centres established by the Central Government under the Integrated Child Development Services (ICDS) programme in the year 1975. For more information, visit: http://wcd.nic.in/childdet.htm

[33] *Madrasas* are Islamic learning centres. Visit http://en.wikipedia.org/wiki/Madrasah to learn more about these centres.

Both Akshaya and E-Krishi rely on the initiative and outreach efforts of the entrepreneurs, whether in increasing awareness about the services, facilitating active participation from community members, and of course, ensuring adequate income generation. This was exemplified in a story of Ms. Sajina's efforts to facilitate an important transaction soon after the E-Krishi portal was launched in 2006. Some women farmers expressed the need to sell copra (coconut kernel) at a better price than they were currently getting for their produce. Ms. Sajina networked with a local wholesaler, Mr. Mohammad Haji, who offered to purchase the copra produce in bulk. She then brought together the women copra producers and helped transact a deal between them and the dealer, thereby ensuring a good margin to the farmers.

Outcomes: The Akshaya project has established itself as a successful model in developing a myriad of ICT-based content and services that strengthen the government's capacity to fulfill its development goals. The direct efforts targeted at spreading e-literacy in Malappuram district in the first phase of the project have ensured that applications and services provided in subsequent phases of Akshaya are in demand by the local community. The state's commitment to provide timely and relevant content is ongoing, reflected for example, in future plans to train government officials in ICTs through Akshaya as well as to facilitate passport application and railway bookings through the centres.

The few women entrepreneurs of Akshaya see their role and position in a positive light, in terms of creating new roles for women in a conservative social environment where women typically do not participate in economic, social or political activities in the public sphere. ICTs hold innumerable options that can be spun off into different business ideas. The women entrepreneurs articulate that ICTs offer tremendous opportunities compared to other options like beautician courses, drawing and tailoring courses, and present an avenue where the community recognises the importance of the services they offer.

In improving their self-confidence and standing in the community, their role has given them the leverage to influence conditions in their communities in favour of women. Ms. Sajina has undertaken surveys on the status of women's health and this information has been used by the *Sarpanch* to target government schemes in a better manner. Ms. Jassila, an entrepreneur in Kacheripadi *Panchayat*, feels that her presence as a woman is in fact significant in spreading the message amongst other women and in motivating girls and women to visit the centre to chat, study, browse, and use other services. In her capacity, she has also secured job opportunities for other women, employing three women at her own centre – one of whom is a divorcee and until recently had not taken up any employment until, upon the insistence of Jassila and her family, she began working at the centre in order to support herself and her child. Such positive spillovers have been tapped into by the Akshaya staff, who have employed Ms. Jassila as a master trainer for other women entrepreneurs.

The women entrepreneurs articulated the importance of relevant and timely provision of content and applications by the government that can aid in the sustainable running of Akshaya centres. But at the same time, they are confident that even if the government services are withdrawn over a period of time, they will be able to sustain themselves through other activities and with the support of the local self-government and community bodies, with whom they have established a mutually supportive relationship over a period of time.

E-Krishi, as an agricultural mission mode project, is slowly moving towards its goal of establishing a platform for virtual and physical transactions. In Malappuram district, the project initially found that establishing networks at the global or even national levels wasn't successful as the quantity and quality assurance required by large players could not be provided by the local farmers. The project now focuses on building local level networks and strengthening institutional buyers. There are attempts to link Kudumbashree SHGs with E-Krishi in order to facilitate raw material procurement and sale of final products over the portal. There are also plans to create a physical market/ warehouse and quality assurance standards for these products, as well as to fine tune the application so that it caters to the multiple farming activities undertaken by farmers on a single piece of land.

E-Krishi has given new life to the Akshaya project, where for instance, Mr. Anvar, observes that while Akshaya centres had CD-based content on various topics such as agriculture, the demand for viewing these CDs from the community came only after the E-Krishi campaign was launched. Yet, from a gender standpoint, it is evident that an undifferentiated approach has been followed as it is believed that the high socio-economic indicators of Kerala (on parameters such as female literacy, maternal health, women in the workforce, etc) are enough to ensure that women will participate in these kinds of initiatives. However, this assumption, coupled with a focus on getting "progressive farmers" to adopt and use E-Krishi has meant that the needs and demands of small and marginal farmers, including women farmers, have not received enough consideration.

Assessing the Project from a Gender Lens

Women's needs within a gender 'neutral' framework

On the whole, the Akshaya project was not established with a gender-sensitive framework in mind. As a pilot project implemented on the basis of a demand raised by the district *Panchayat*, no gender-specific criteria were laid out in the design or implementation. Yet, from meeting with project representatives at various levels, a finding was that women's needs had been operationalised to some extent into the implementation, with moderate success. One reason cited for this is the fact that "*the project required the local-self government to anchor it and take an active role in it*", and so, where 40 percent of the elected local representatives in Kerala are women, this aspect has had positive impacts. Another, is that the context of Malappuram – with adult males in most households working in the Gulf region – itself created a situation in which women are the majority of the trainees and users of Akshaya centres. In addition, Mr. Sivasankar points to gender-specific characteristics that he believes influenced women's participation, such as, women "*had less ego hassles in admitting that they were computer illiterate*" and "*were interested in learning IT so that they could better support their children's education in schools*", and also because "*some women were concerned about growing availability of pornography through the Internet*" (and so, wanted to be involved in the Akshaya initiative to ensure that it remained development-oriented). Mr. Sivasankar concludes from the above conditions that an "*investment in women happened, not by design, but by default, due to the nature of the intervention.*"

The "default" gender scenario is reflected in the gender-neutral nature of the content provided at Akshaya centres – largely in the form of bill payment, e-mail and chat facilities and e-literacy programmes. Although some CDs have been developed by KSITM in areas of higher education,

agriculture, health, and so on, there has not been any mechanism to create demand from the community for these materials or to tailor them to local women's needs. Thus, despite the high rate of early marriage, divorce and desertion of women in the area, content or measures to handle these issues has not been specifically developed. Yet, more than one representative felt that the mere presence of Akshaya centres with their social inclination, has had a positive impact in the community and has "*reduced the general social evils*" in the district as well as brought women out of the confines of their homes.

Facilitating women's participation despite social constraints

Women's ownership of centres was articulated as an important factor in bringing more girls and women to become computer literate and use the services provided. Confronting this inadequacy in centres operated by men, more women trainers and tutors have been appointed in recent years to encourage women users. Despite this measure helping in reaching a figure of greater than 50 percent of users being women, 'ownership' per se by women entrepreneurs was not perceived as a critical factor by some representatives.

In Ms. Jassila's centre, 80 percent of those who visited for chatting and video-conferencing facilities were women. Although women largely come in for communication or utility payment purposes, once they visit the centre, they tend to stay on to surf the net or gather more information on issues. The Akshaya centres thus become the first step for women to explore the world outside their local context. Based on this, Mr. Salim feels that in the future, more efforts need to be geared towards spreading awareness amongst women on the use of the Internet to get information and general use of IT to get better placements and better support themselves.

Centring E-Krishi within a pro-poor and pro-woman approach

Recognising that the E-Krishi project is in its nascent stages, it is critical at this juncture to think about gender in a systematic manner so that the gains that have been reached through Akshaya are strengthened and women's needs are integrated in a holistic manner. This is a tough task, because although 60 percent of the population of Malappuram is engaged in agriculture, women's role in farming is minimal because of two factors: one is the cultural context, where despite relatively high levels of income, the social indicators in the region are not very high. In particular, women do not actively seek employment opportunities or participate in agricultural activities, remaining dependent on the income of male family members. Further, the region's economy is largely supported by remittances from family members working in the Gulf region and so, agriculture itself becomes a secondary source of income. These mean that by default, the E-Krishi project targets male farmers.

Additionally, the emphasis is on targeting "progressive" farmers, who tend to be less risk averse as they are relatively better off, tend to own larger farms, and can therefore afford to experiment with new innovations such as E-Krishi. The small proportion of women engaged in agriculture are involved in homestead cultivation or small-farm agriculture. This group encompasses vulnerable women, who may have been deserted by their husbands and are seeking new sources of income. Unfortunately, the E-Krishi project in its current focus towards progressive farmers cannot sufficiently address the needs of marginal and vulnerable farmers. A representative responded on this issue, saying, "*We should think about these facilities and how they can help these kinds of women. It should be an agenda. But right now, we are focusing on progressive farmers.*" In the

absence of sufficient muscle of individual women farmers, efforts based on women's collectives need to be pursued.

With other groups of women, E-Krishi has begun to factor in the needs of women members of Kudumbashree production units, where a separate portal is being developed for SHGs to make available their produce in an aggregated manner. Ms. Valsamma, Assistant Director, Marketing, Agricultural Department, also feels that the credit requirements of SHGs can be routed through Akshaya centres – since Akshaya entrepreneurs interact quite frequently with the SHG members and understand the "pulse" of the groups, they would be in a better position to dispense credit to whom it is most required.

Mahiti Mitra Kiosks within the Setu Project of Abhiyan

Background: Abhiyan is a network of grassroots organisations, including women's bodies that came together after the 1998 cyclone in Gujarat.[34] The driving vision was to provide a platform for collective action involving relief and rehabilitation work in the area, followed by future long-term development interventions. The three major roles that Abhiyan plays are that of creation of institutions and innovations, provision of services, and collaboration with other organisations.

The main initiative of Abhiyan is its 'Setu' centres, literally translating into 'bridge' centres. These centres were set up within days after the 2001 earthquake in Gujarat and functioned as nodes for relief and rehabilitation work in the area. Structurally, the Setu is a cluster-level knowledge and information facilitation and support centre, servicing 15-20 villages. A series of 18 cluster-level resource support centres, or Setus, covering 360 villages of the district focus on synergising the roles of, and maintaining information and dissemination linkages between NGOs, district and state government, and external experts with the local communities. They have become a key node within the community and have brought about a movement for self-governance in the communities. Since the rehabilitation phase, they have evolved into development institutions, whose main goals are to strengthen local systems and institutional structures, in order that the latter improve their functioning and mechanisms; strengthen their capacity for development decision-making; and place development as a *people's agenda* rather than as an external evolved mandate.

Mahiti Mitra is squarely placed within the Setu strategy, and is a reflection of the dynamism of the Setu programme. Whereas the Setu's dissemination mechanism for information and services is not so well structured, Mahiti Mitra centres come in to provide the required structures and means for information and communication services. The Setus continue to provide institutional support and grassroots presence for the operation of the centres.

Vision of change: The driving vision behind this concept is reflected by Sushma Iyengar, Director, Abhiyan: "*Information and networks are power…the earthquake triggered the need for a system of transparency of information on the ground level to make the government accountable*." Abhiyan's vision is to invest ownership and control of information into the hands of the

[34] See Footnote 16 in chapter 3 for more details on the cyclone and earthquake in Gujarat.

community through the Setu and its linkages with the *Panchayats* to facilitate accountable self-governance and long-term development.

The introduction of ICTs within the Abhiyan network occurred primarily as an extension of the Setu concept, when information support centres, or Mahiti Mitras, were set up in the Setu clusters. The intervention serves as a demonstration for the effective use of ICTs in the districts of Kutch for strengthening the *Gram Panchayat* system and improving the transparency and accountability of these structures. The dual goals of Mahiti Mitra are to test the feasibility and sustainability of a revenue model for running of information centres and "*move beyond e-governance"* (as provided at private kiosks) "*to e-self governance*." Ms. Iyengar articulates the role of telecentres in the ICTD field as, "*information retailing in a specialised way*." But she believes that, "*kiosks will work only if linked to institutions*" and this is the driving motivation behind positioning the Mahiti Mitra centres as the dissemination platform of the Setus. Clearly, the vision behind Mahiti Mitra permeates into the implementation level as well, because the organiser at the Boladi Setu, who is in charge of Lodhai Mahiti Mitra kiosk remarks, "*Although there is a demand from the community, we don't want the Mahiti Mitra to become a computer training institute… [We] want it to remain as a development and governance centre*." This vision guides the decisions made on finding the balance between revenue or commission-based services and those offered for free at the centres.

Gender considerations clearly do not feature strongly in this theory of change. A project representative reports that while "*women were one of the parameters*" in the rehabilitation activities of the Abhiyan network, gender concerns did not strongly guide the development phase of the Setus and establishment of Mahiti Mitras. Ms. Iyengar also shared that "*the issue is not a blind spot*" and although there are "*attempts to be gender sensitive, we are not quite there yet*."

Systems and Processes: The perceived value of the centres within the community setting is highlighted by a village leader from Lodhai village who says: "*The Mahiti Mitra has become a single window system. From here, we get all types of information. Earlier, all information used to go from leaders like me, but now, even the poorer people have their own information… Even the Talatis and government officers rely on the centre, because they get updated information from Gandhinagar directly at the centre*." The operator at the Adesar Mahiti Mitra echoes this: "*Earlier the villagers used to go the village leaders for information, but it did not lead to empowerment. So in that sense, there was an information gap and the Mahiti Mitra played the role of a mediator to fill that gap. We gave people a lot of information and they realised they didn't need to depend on a single person for it. The trust they placed in the Mahiti Mitra centres also increased*."

An important stakeholder in the Mahiti Mitra process is Kutch-Link (K-Link), the technical wing of the Abhiyan programme that develops ICT applications for rural development and maintains links with the community level through its close association with the Setu field staff. This technical support group was a result of Abhiyan's belief in the importance of synergising the efforts of development and technical professionals in order to affect change through ICTs. Ms. Iyengar believes that "*for an ICT intervention to successfully affect information-driven empowerment, linkages are necessary with both the grassroots and the technical levels, and is incomplete without synergies between the two***.**"

Specifically, K-Link focuses on developing contextualised software applications for use in the range of functions that the Setu and consequently, Mahiti Mitras, perform. All applications have been developed in-house because according to Mr. Solanki, of K-Link, "*the market doesn't have ready-made solutions for community needs*." The software organises and analyses data that feeds into the facilitative activities of Setus in governance reform, community development and cluster-level planning. K-Link has developed an internal MIS (called SIMS) that stores, tracks and manages all the community-level data, including information on household demographics, crops, livestock, migration, traditional skills, and on demographics of vulnerable populations. Data for the system is collected by the field workers at the Setu level and inputted by the information officers at each Setu. Further consolidation and analysis is done at the K-Link level and the data set is fully updated every two years.

The Mahiti Mitra centres are set up in central public spaces in villages, such as a *bazaar*, and are usually located within a *Panchayat* space, which enables the establishment of strong ties with the local governance structures. Community members view the Mahiti Mitra centre as the nodal point for dissemination of information and services. Placing the gender consideration in this context, Mr. Iyengar notes that, "*the challenge we face is to set up a neutral space like the Mahiti Mitra, and get women to come to it*." Yet, the space is hardly 'neutral', as elucidated by a woman user of the Lodhai Mahiti Mitra, who narrates, "*This [centre] is in the main chowk and is a central transportation area, and many men come here. Initially, there was an educational programme held for women, but women couldn't come due to the [location] problems. I requested the Setu people to change the location, but it was not possible."*

The social norms and cultural restraints of the region have kept the levels of women's involvement in the Setu and Mahiti Mitra intervention low. In fact, observing that there were *no* women in the cadre of development para-professionals for *Panchayat* strengthening, Mr. Solanki remarks that Abhiyan had to "*modify and liberalise the project design to get more women*." This involved revising selection norms by reducing the minimum literacy requirement, shortening the duration of the training programme and bringing resources and trainers to local areas rather than taking girls to cities for capacity building exercises, providing certificates at the end of training as a motivation tool and convincing the community.

The operators of the Mahiti Mitra centres are local persons, who are in charge of the daily activities at the centre and are monitored and guided by the Setu team. All community-end processes for collection of information and awareness-raising are undertaken by the Setu team without the direct involvement of the operators. Where only 4 of 18 operators are women, seeking the participation of community women in the centres has been a huge constraint. Mr. Bharath, the ICT coordinator at the Adesar Setu, recognises this design imperative when he says, *"If we had women in the Setu team, and as operators of the Mahiti Mitra, we would have had greater participation from women*." He underlines the potential benefit of having a planned strategy for women's inclusion that isn't just about numbers but is built around qualitative participation, and adds, "*If we had a woman on the team, a better rapport would be built with the women from the community, and they would discuss sensitive issues with women team members. Today, we have only barely touched the top layers of some development issues, because we are not comfortable discussing [more sensitive] issues with women. Women team members would have allowed for us to intervene in many other areas, such as violence and health*." This is clearly an imperative that

must be addressed, given that only 7 out of 112 Setu team members are women and efforts to increase their numbers have been unsuccessful due to the lack of skills among local girls and the very basic conditions in which Setu members live, which are seen as unfavourable for young girls. Some efforts have been made in the recent past to modify the timings and location of the centres and to find women operators. This is a positive move because the field visits revealed that those centres that had a woman operator or women members in the Setu team had larger numbers of community women participating in information processes and training sessions. Direct efforts at impacting the gendered nature of access patterns have been successful in increasing women's participation in Sailendra Mahiti Mitra centre of Samakhyali Setu. Their record of visitors revealed that while a male operator ran the centre in 2006, there were 847 male visitors and only 101 female visitors; and in the period of January and February 2007, when he was replaced by a woman operator, the number of male visitors was 235 and those of women was 81 – clearly illustrating a significant positive change in the gender ratio.

One exception to the low participation rates of women is the tele-conferencing programmes on health, which, because they address women's specific needs, are popular amongst women's collectives. Even in this regard, though, Setu team members from Rapar Block noted that while women would attend, they would not ask questions or participate if other men were present, and so, the team had to design the sessions such that at least 5 of 15 questions were posed by women and ensure that assistance was provided to women in framing questions and in building their confidence. The empowerment possibilities for women users in these initiatives become clear when an elderly woman user from a minority community of the Lodhai Mahiti Mitra reflects, "*I used to stay within the four walls of my house, and there were many social constraints imposed on me. But through my SHG, I learned about the Setu and the Mahiti Mitra"*. Earlier she had to spend time, resources and energy to travel to the city and ended up dissatisfied with the hierarchical attitude of the governmental officials. But now she regularly turns to the Mahiti Mitra centre for her governance-related needs. Having an initial small group of women users who bought into the ICT strategy helped in increasing participation from other women. The woman adds, "*Now because of me, all the other women in my family come to the centre on their own*." Achieving that critical mass of women's active and meaningful participation that can facilitate empowering outcomes makes a gender-sensitive project design an even greater imperative.

Another gender concern faced by the Mahiti Mitra centres is the lack of availability of gender-sensitive or women-specific content, another prerequisite for women's inclusion. The Kutch region is heavily networked through women's SHGs; yet, socio-cultural factors continue to impact on women's full participation in the public sphere and this is where relevant content provided at an accessible location can contribute to the process of women's agency building. Ms. Iyengar, however, acknowledges that the policy on gender-sensitive content for telecentre initiatives is not at a mature stage in this project.

Outcomes: Computer training is provided for governmental officials based on contextualised modules developed at the Abhiyan K-Link centre. Keeping the content localised is critical in improving the efficiency of the training, and is in itself a good 'marketing' tool for the activities of the centre. The centres also house a legal portal developed by K-Link and partner organisations of Abhiyan, for information on legal rights and access to legal services. Another application addresses the issues surrounding the Right to Information Act (RTI Act) and helps local

communities understand the governance structures in their villages.[35] While the access and participation of marginalised populations in Mahiti Mitra centres continues to be an area of concern, innovations have been introduced to increase their engagement in the activities of the centres and, more generally, in those of the Setu. Future goals of the Mahiti Mitra project in this regard include increasing the extent of use by women and other marginalised sections, provision of relevant governmental information, especially on entitlements, for access by these groups at the centres, and developing the capacity of the *Panchayats* to engage more with the related governance mechanisms through the centre.

Discussions on financial sustainability bring to light conflicting views of representatives at different levels of implementation. On the one hand, Mr. Solanki indicates that since financial sustainability was one of the important objectives of the Mahiti Mitra project, a trade-off had to be made in terms of gender considerations. He says, "*Our initial thought was not on gender; it was on governance. If our focus had been on making centres accessible to women, then we could not have achieved sustainability of the centres…The goal was to work with the Panchayat and governance, so it was best to have the centres located in the Panchayat buildings or in other central locations*."

Yet, sustainability carries with it gendered connotations as well as consequences for most marginalised groups, as highlighted by Mr. Bharath of Adesar Setu. Reflecting on the revenue model being tested in Mahiti Mitras, he comments, "*If we want, we can increase our income [from the Mahiti Mitra centres] three-fold. But for that, we will have to change our entire focus… [Where] people will come in for downloading or computer class, but they won't come for legal issues or for women's issues… and then our entire model will become a market one*." He strongly believes that the intervention is aimed at establishing a new paradigm of the social and developmental role of information, where a balance has to be drawn between generating income and providing citizenship-related services, without altering the essential developmental ideal of the Mahiti Mitra project. He concludes that, "*Sustainability is a market-type thing, and this is not possible in our social-developmental approach. We are sitting in a marketplace, but our approach cannot be a market approach… the conditions in this area are very poor and people have been fighting for basic sustenance and survival. Legal [issues], health and so on, are basic rights – we can not have payment for access to information regarding them… If you follow that kind of a model, then things like social development, legal rights, gender-related information and all those goals will definitely be hampered.*"

Assessing the Project from a Gender Lens

The empowerment possibility within the vision of change

There is clear recognition that information is empowering in its very nature, and is a basic right of the people, and therefore, project design focused on improving community access to, use of and control over information is a central goal. The need for this intervention emerged in the context of the devastations caused by the earthquake and in time evolved towards the use of ICT-based platforms in the form of the Mahiti Mitra intervention. The model of the ICT intervention is such that the empowerment possibility lies in the end value of the information provided, and in how it is used by the community.

[35]For more information on the Right to Information Act, which gives every citizen the right to inspect government records, memos, documents, circulars, and so on, visit: http://persmin.nic.in/RTI/WelcomeRTI.htm

Trade-offs between gender and governance reform

The Setu project emerged in a specific context where the emphasis was on strengthening local self-governance and engaging the community in demanding its rights. Within this context, new technologies were found to be useful in collecting, analysing and disseminating information related to government processes, schemes and services. This process is obviously a political one, in which power relations underlying information sharing are challenged, and those who were earlier custodians of information in the community are being encouraged and empowered to share this information in a manner that facilitates community development. In this context, incorporating gender concerns from the start would have been a contentious process, as it would have involved the simultaneous challenging of power relations on another front. Project visionaries and representatives feel that without first securing the buy-in of community members and the power elite, and without establishing basic e-self governance, it would be even counter-productive to take up the issue of gender, and develop specific programme elements to encourage women's participation.

Yet, four years into the project, the question remains as to how to bring in gender sensitive components in a community project, and (as articulated by Ms. Iyengar) "*ensure that women come and access a 'neutral' space that is located in the bazaar.*" All of the project representatives highlighted the strong women's movement existing in the region and the groundwork already laid out in the area of women's mobilisation and empowerment. However, during the four year period of Setu's existence, despite focused efforts by the staff to reach out to the community and mobilise groups to participate in information processes, women's participation, either as para-professionals at the community level or as visitors of the Mahiti Mitra centres, or as contributors towards content development has been minimal. Participation in the Mahiti Mitra is crucial because access and use of the information is where the empowerment possibility lies in the Abhiyan model. On the organisational end, efforts specifically directed at encouraging girls to participate in Abhiyan's programmes have recently been taken up (and the criteria to participate have been loosened so that more girls fit the criteria) as well as efforts to reach out to women's SHG groups and women leaders to bring other women in. Other efforts to develop content that is gender-sensitive – such as e-justice programmes with information on domestic violence and livelihoods programmes with information on entitlements that are women-specific – as well as applications that can be used by women's groups with low literacy levels and in a context where there are great restrictions on women's autonomy and role in public spaces, are just emerging.

Gendered choices in project implementation

Furthermore, where community spaces are extremely gendered and public spaces tend to be seen as the male domain, locating Mahiti Mitra centres in central bazaars, where men tend to sit all day, comes at the cost of women's access to the centres. Although some women of that village visit these centres in groups, they constitute the minority, and women from other villages seldom visit the centres. This, coupled with the lack of an explicit preference for selecting women as operators of the centre, has meant that even when women visit the centre to attend ISRO's programmes on maternal and child health, they are uncomfortable with asking questions freely in front of men or on "*andar ki baathen*" (taboo subjects). At the Samakhyali Mahiti Mitra, once a women operator was hired, her networking with the local SHGs increased, and she was able to encourage women to visit the Mahiti Mitra on a regular basis. Some Setu staff however felt that having a woman

running the centre would alienate men from visiting the centre. There thus seems to be a definite trade-off here between making centres accessible to the 'general' community in a cluster of villages versus creating an environment that is accessible to those who are most alienated from information sources and external linkages, i.e., women.

Strength of the community approach

There are several strong points worth noting in the Abhiyan model – the *process* of setting up Setu centres with Mahiti Mitra kiosks has been given great attention, with central emphasis on empowering the community to participate in development activities that benefit them as well as on strengthening and incentivising the local-self government body to better perform their roles. The operator of the centre is a local person as are the Setu staff who reside in the village, and so, are in tune with the realities of the community. Even the technical experts in K-Link are "*socially sensitive technocrats*" (as Mr. Solanki classifies himself) and do not design applications in isolation but work in conjunction with the Setu staff to ensure that applications are user-friendly and fitting with the needs of the community. Additionally, despite Mahiti Mitra centres being tested as a revenue model, the kinds of services and charges attached to these services are in line with the vision of Abhiyan to empower communities – accordingly, those services which are central to the community's rights and struggles are provided for free and also, the highest revenue generating services (like computer literacy) aren't pushed at the cost of low-revenue or free services like information on reproductive health or RTI Act. There seems to be solid enough groundwork in building a community-owned and oriented model in Abhiyan, and alongside, making significant efforts in grassroots women's empowerment, to then synergise the two in order to ensure that women are not sidelined (yet again) from the empowering possibilities of new technologies and to bring maximum positive gains for women so that their needs and rights are realised.

Thagavalagams in DHAN Foundation

Background: Mr. Muthukumarasamy (henceforth Mr. Muthu), Project Executive of the ICT component of DHAN foundation explained the evolution of the ICT programme: "*In 2001, we held an income generation activity for family members of the Kalanjiam (SHGs). There are around 38 self-managed federations who took care of their own financial transactions. But they felt the need for some kind of employment opportunities. So we thought, 'Why not do something for their family members using Information Technology?' We then initiated community colleges to provide training to family members who had passed 10th standard, with the aim of helping them get income earning opportunities later. Initially we trained 27 women members free of cost in hardware maintenance, software and other aspects. Some were placed externally, like in travel companies."*

After this initial step, DHAN got into partnership with the Indian Institute of Technology, Madras (IIT-Madras) on the SARI project where the attempt was to use CorDECT technology in a rural telecentre project. Mr. Muthu narrates, "*We thought, okay, we have trained a village level person, so why not make them the village-level operator for this project?*" In this manner, 10-12 women were selected as operators, and they saw it as an employment opportunity because they had already undergone training in IT. Currently, DHAN has 162 centres, or Thagavalagams, 40 of

which are in Melur and Kottampetti blocks and the remaining are in coastal areas of Tamil Nadu. A majority of these are run by women operators.

Vision of Change: The ICT project is clearly situated within the larger DHAN model of "*giving back to society.*" Mr. Muthu rationalises the perspective, "*if we approach those who have already progressed, what benefit do they get out of it and what satisfaction do we get? Instead, we integrate those who are disadvantaged and isolated from the mainstream.*" These can be people disadvantaged due to their caste, class or gender, and instead of treating them as "*just salary earners, they are considered equal partners in the development process*."

Taking stock of the impact that IT has had in spurring job opportunities in India, he compares it to a traditional vocation, tailoring, and argues, "*every street has a tailor, so we wanted to do something thus far untried in the village... and how many of those who do a course in tailoring get employed in a factory? But in my IT centre, I can employ 162 operators and some centres have support staff as well*." Repeatedly emphasising the empowering potential of ICTs, he says, "*When educated people are taking up computers, why not us? There are so many telecentre projects being set up these days because everyone wants to tap into the potential of IT. There is demand in this area.*"

In particular, DHAN stresses a holistic approach to development, taking into account the multiple needs and constraints at the village level. Unlike other telecentre projects which may exclusively implement agriculture or e-governance services, DHAN offers a package of development services catering to a variety of development and livelihoods needs. And in this process, women are the main focus, forming the bulk of the telecentre operators. Again, this fits with the larger strategy of DHAN that is "*oriented to women's development*." Mr. Muthu observes that once students finish their 10th standard, boys tend to enroll themselves in a computer centre, but girls don't. So, DHAN's ICT component focuses on them and enables them to participate in learning and using IT.

Systems and Processes: A variety of services are made available at the centres, but tele-conferencing facilities for agriculture, health, veterinary, and education support as well as basic computer training are the main services. In addition, detailed household information is collected and maintained at the telecentre, and operators occasionally engage in job work, data entry and typing of petitions for different groups of people. Communication services like e-mail, browsing and web conferencing with relatives are offered. Information on development topics as well as on the latest schemes and services provided by the government are made available through the computer and CDs. Birth and caste certificates are submitted through DHAN's telecentres to the respective departments. Most centres also maintain a library as well as 'offline' content on diverse topics that cater to the needs of local people, and also display charts and pictures relating to village-level information. Lately, an SMS service has been launched, wherein operators provide e-commerce or locally relevant messages to cell phone users in the village. The development focus is revealed in the efforts to restrict certain kinds of activities at the centre, including those who come in just to browse – this is also done to ensure that no 'malpractices' arise from using the Internet to search for objectionable content.

The selection of technology platforms was not completely planned and was a result of multiple circumstances and experiences. Mr. Muthu elaborates on various dilemma that were confronted:

"*We knew the limitations of CorDECT technology and so we didn't use it in the coastal areas where villages are spread out. Internet is a high recurring cost here [in Melur] and so we decided that it is better to have a high established cost in the beginning with zero recurring cost [in the coastal centres]. So we had to find a suitable technology choice. Further, we have to examine the kinds of services we offer. If we only provide education, what is the difference between us any other training centre? We have to look at other problems – if rural school infrastructure is poor, then we have to think about what we can do to support them, perhaps, using CDs. Then, we started using e-mail because everyone said it was a key tool. But we found that people weren't taking on to it. Instead, they expressed a need for video-conferencing so we developed that package. Or, with using SMS – others may use it for wrong purposes or as a hobby but we thought about how we can use it innovatively as a development tool."*

These choices were made within larger difficulties of finding the right kind of connectivity model for all centres and dealing with the quality of electricity supply (which tends to fluctuate a lot) and cost (they are charged at commercial rates). Both these issues had bearing on community participation in the initial stages, as is revealed by Ms. Rajee, an operator, who narrates her initial troubles in setting up video-conferencing facilities: "*The Internet would keep getting disconnected initially. I would bring people to the centre for video-conferencing, but then the connection would fail, and this caused problems. Once I had canvassed and convinced around 20 people to come to the centre explaining the usefulness of conferencing. I compelled them! But then, we weren't able to conference due to technical problems at the other end. Everyone scolded me soundly! I thought that this facility wouldn't work after this point and so, the next time, I just brought in just two people and made it work. Then they started talking about our services and the word spread. So far (between 2004 and 2006), more than 150 people have used this facility. So once health was well established, we started agriculture services. I introduced my own innovation- if people were not able to get their questions cleared during the conferencing, I would record them on an MV4 recorder that uses very little bandwidth and send it across to the concerned person. Then I would get the answers and play them back to the people."*

The overall approach to content and applications development is in ensuring that the technology "*blends with the day-to-day activities of the villagers.*" DHAN's staff, who develop the information and services, think about how they can adapt technologies and devise applications to meet specific needs, be it agriculture or animal husbandry. More so, Mr. Muthu highlighted the importance of monitoring whether the interventions have been of use and have brought about visible changes in the lives of those who have accessed them. In this regard, having domain-specific information in regional languages and in formats that are comprehensible to local people, and which involve people's own contributions in the creation and modification of information and services based on their needs, are all necessary prerequisites. Mr. Muthu sums up, "*Community-based, participative, content development is necessary, otherwise the community just won't use it."*

In the selection of the operator, there was a strong push for finding young girls or women as operators. While there were no age- or education-based criteria, the motivation levels of the operators, their orientation towards the community and ability to work in a team were critical factors. In fact, Mr. Muthu felt that it is the operator's attitude that ultimately defines whether services are accessed or not, especially by those from marginalised groups: "*If they have any*

(discriminatory) feelings, then we have to be watchful. Initially they may say, 'sir, those people won't come', but we respond with 'nothing doing, you must sit with them and talk about the centre.' And we demonstrate through our example so they get the idea. We interact especially with those who aren't likely to come to the centre. We have to persist because once the villagers trust that we are there to do some good, they never let us down. If we demonstrate how to interact with the villagers through our actions, there is no way that the operator can develop a wrong mind frame."

One of the most significant factors based on the above discussion was in moulding the operators to carry out their role effectively. DHAN has developed detailed modules on various aspects such as technical aspects, accounting, handling classes, public speaking, and so on, and builds the operators' capacities in the initial period as well as through the course of their work. Experienced operators assist newer ones in holding events and preparing reports. This, alongside a strong motivational element, in which the unique role carried out by the operators and the spirit of service with which they execute their role are repeatedly drilled in, is important, so that operators "*realise why they are doing this work.*" He adds, *"We can keep saying 'do it', and they will to a certain extent, but to go beyond that, they must recognise the cause and the service motive and understand what working in the development sector is about.*" A similar strategy is used in convincing the family and community members of the operators on the significance of the work. DHAN holds get-togethers annually to interact with the operators' families and emphasise that "*they are doing the work that we cannot*." The families, too, observe the growth of the operators in the past year and recognise the value of their contributions.

In discussing the location of the centre, a double-sided perspective on gender issues emerged. On the one side, the initial problems arising out of locating the telecentre in a central place were articulated, wherein it was quickly found that mostly men were crowding around the centre and none of the women were visiting it. DHAN then moved towards looking for a "*homely environment*", and in the process, also ensured that the house owner was agreeable to the nature of the work as well as to the diverse groups of people, from different class and caste backgrounds, visiting the centre. While taking special precautions to ensure that the location did not hamper access of any group, on the other hand, the organisation seemed particularly keen on *not* stressing any one group's access over the other: "*We do not particularly focus to any one community – our services are open to all."* Thus, while the project was rooted in the *Kalanjiam* movement, given that "*nothing can succeed without the support of Kalanjiam members as they are a strong force in this area*", a need was seen to strike a careful balance between meeting the needs of SHG members without "*cultivating a general feeling in the community that 'this project is a Kalanjiam initiative and there is nothing in it for me."* The need to concurrently "*give SHG women importance, but not make it exclusive for them*" was justified on the grounds that "*this is a technology initiative and we shouldn't restrict its use.*" Accordingly, the usage patterns in telecentres revealed no difference between SHG members vis-à-vis other village women or community members, and this undifferentiated approach was seen in both the development of information and services and in the membership of the Thagavalagam Development Association, a body that monitors the activities of the operator.

As many of DHAN's ICT services are likely to challenge existing power relations, especially those with government officials, the organisation has adopted a multi-pronged approach to securing their cooperation and support. This includes the participation of local officials in video-conferencing

facilities; repeatedly highlighting the motive of serving the community through their better access to government services; encouraging the operator to cultivate relationships with officials through her role as a grassroots leader; offering support and human resources to departments to hold camps and workshops, to mobilise participants, and to undertake data entry and computerisation works; and of course, inviting officials and leaders as special guests for functions and inaugurations. If all these do not work, a complaint is filed with the Collector, but such strong measures have not been required by and large.

Outcomes: Ms. Radhika, a telecentre operator, reflects: "*If I hadn't become an operator, I would be sitting at home. I would have never known about the outside world. But now, I am able to get a ration card for my household without paying any bribes. I really struggled to get it, to the point where my family wondered whether it is worth slogging this much. But then they realised 'not bad, our daughter has done something using her experiences at work. Now, she talks about the Taluk office, Village Organisation, Agricultural Officer, and others.' There are many differences in me now*." Her experiences are seconded by Ms. Rajee: *"If I had taken up another job, I would have just implemented it but would not have learned anything in the process. But because I am here, I am able to learn about hardware, software and also understand people's difficulties and needs. [Other girls] only know about the inside world. But I get to know so many things relating to my job and the outside world.***"**

DHAN's empowerment strategy within ICTs has brought about significant gains for operators, many of whom have stayed with the programme since its initiation. Mr. Muthu considers this a huge strength: "*If you look at other institutions, most girls have left either due to marriage-related issues or childbearing. But all our operators are there from the very beginning, even though they could get higher salaries elsewhere. They have become so efficient at their work and with their experiences that they could go some other place. But they haven't."* Clearly then, the empowering outcomes have benefited not just the operators in their own personal lives and growth, but also the organisation. In the case of the latter, the presence of women operators has had a definite impact on women users frequenting the centre and using tele-medicine services to talk on women's health issues or in accessing birth certificates for their children. Also, it was repeatedly pointed out that while men operators are reluctant to 'canvass' and inform people on the nature of information and services offered, women operators treated villagers, including young men and *Panchayat* leaders, as their relatives and spoke in a familiar manner.

Women's greater involvement in development activities compared to men, according to Mr. Muthu is sufficient grounds for tapping into them as resources to run these kinds of initiatives and create a certain standard for the centre. "*ICT is a great tool for empowerment compared to other technologies or other methodologies like forming collectives or conducting camps. I can say this with hundred percent surety, as I have seen the difference. And further, only women can lead this change in rural areas and take this forward in the manner that we have seen*." The efforts taken forward by the women operators lead Ms. Rajee to conclude, "*People know that 'if we go there, we will get the right information.*" All operators noted that while they initially had to go door-to-door and build awareness to secure the community's participation in using the centres, this was not necessary anymore as community members consult them in securing additional information, content or services, and invite them to events and functions to provide their inputs. Ms. Radhika also ensures that she participates in *Gram Sabha* meetings so that she can better understand the

community's needs and constraints and provide information on how the telecentres can deal with some of these.

The community's role lies not just in participating and using services – and securing benefits through video-conferencing with officials, communicating with relatives in the Gulf, securing certificates and forms without paying additional amounts, and so on – but also in playing a strong role in monitoring the centres. Thagavalagam Village Associations, comprising ~~of~~ members from different user groups (farmers, SHG members, etc), meet on a monthly basis to review the activities of the operator, discuss and plan for the upcoming month, and take action or make decisions as necessary. This is supplemented with DHAN's own MIS, which all operators complete on an ongoing basis, and fortnightly meetings at the community colleges to check the status of various activities.

DHAN's ability to establish the centres as spaces dedicated towards community development is further exemplified in its perception of sustainability. Dismissing the priority given to income generation in other projects, Mr. Muthu observes that if all services were charged for, the infrastructure would "*go waste*" and there would be no users. He debunks the myth of demand-driven change, and comments, "*We should not force the community. We need to get them to realise the value of the services offered and build on the network before they are ready to pay charges for services*." Discussing service sustainability (in offering relevant and timely services) and user sustainability (in ensuring that a wide cross-section of people use all services) as critical aspects to be built in any project, he argues that "*We cannot talk about financial sustainability on the very first day. We need to talk about whether the services are meeting people's needs; whether the operators are equipped to undertake their role; and, whether we are keeping up our commitment of developing technologies to meet their needs.*" At the same time, DHAN recognises the importance of a long-term financial plan in centres that have matured over a period of time, and so, the project is now attempting to shift ownership to the village monitoring committees in these centres, where they would be responsible for all financial transactions, payment of the operator, and implementation of major activities.

Assessing the Project from a Gender Lens

Emphasis on service versus services

A clear emphasis in the DHAN project is that Thagavalagams are not centres to conduct training or provide revenue-based services but are a vehicle to carry forward DHAN's larger goals of serving the community and bringing forth development in line with the community's needs. The entire ethos of the project – right from the selection and capacity building of the operator, to the convincing of her family on her critical role, to securing the cooperation of power elites and government officials, to even the approach used to evaluate the success and sustainability of the centre – is reflective of the motive to serve. In this context, ICTs are seen as a tool that can facilitate change in a way that was previously not possible and needs to be engaged with, as they are the tools of the mainstream; yet technology does not supersede community-end processes, which form the bulk of DHAN's operations at the village level. Thus, alongside the use of video-conferencing, computer education packages and free SMS services, DHAN operators spend considerable time canvassing in the village to secure and provide information; develop 'offline' content in the form of CDs, PowerPoint presentations and library books on a variety of topics;

form user groups and holding monthly meetings to ensure their involvement in the centre; hold annual events and functions; and visit and network with government officials to provide support as well as get latest information. Such a mix of technical and social activities is clearly what has ensured that the Thagavalagams are not isolated technical centres but are spaces that the community can reach to in order to deal with their constraints and needs.

Women's needs within a set up that is 'open to all'

The organisation's perception of its image within the community reveals an interesting paradox, where on one hand, there is a repeated emphasis on the critical role that women, particularly the *Kalanjiam* groups, play in community development processes and their initiative in engaging in any process of progressive social change. Yet, while "*tapping into this resource*" for the ICT project, the organisation seemed particularly cautious about cultivating a picture of a 'woman-only' space or a '*Kalanjiam*-oriented' project. This dichotomous approach, however, needs to be considered within the larger power structures that operate at the community level, wherein specifically targeting women's collectives in the initial period may have needed to be balanced with building ownership and trust of other women, community members, and local elites. In this case, it may have been strategic to create the centre as a space that is open to all, without being one that is unfriendly to women or disadvantaged groups. Yet, one observable effect of this strategising is that there did not seem to be a vast range of women-specific content at the centres. When asked to elaborate on the project elements developed to incorporate the specific needs of women, the project representative's response was in the direction of women's ownership of the space – which itself was seen as sufficient to ensure women's use of the space to meet their needs – and some kinds of content or services such as nutritional information, astrology services, and provision of birth certificates and computer education for the children of women.

Individual empowerment versus collective empowerment

One element that comes out very strongly in the DHAN case is the extent to which the project has brought about changes in the lives of individual women. The reflections of the operators themselves and Mr. Muthu's analysis of the change process reveal that their role in the management of the telecentres has created significant changes in their personal and family lives and in their perception within the larger community. The operators compare themselves to other women in their village, who are yet unsure about stepping into public spaces and do not know anything beyond their home spheres. They are cognizant of the way in which their leadership position has given them opportunities to learn and grow. Additionally, they recognise the merit of working in the IT line, where there is a continuous growth curve and where the services provided benefit all groups of people, compared with traditional venues like tailoring and factory-based employment that benefit only those who are employed in it and only in economic terms.

However, empowerment in the collective sense does not seem to have been strengthened through the ICT project. In the absence of content or processes specifically geared to women (as outlined above), some women have benefited individually – directly as users of services, or indirectly, as mothers of students who have learned to use computers. While these individual gains are significant, the use of ICTs in order to collectively challenge gender hierarchies in the community settings seems to be a lost opportunity. The operators, when questioned about how the project has benefited SHG members and other women, were unable to point to any specific instances or aspects that reflect women confronting power relations or unfair gender practices in society, such

as domestic violence or female foeticide. Their clarity on ICT as critical knowledge and learning tools was not complemented with an articulation of how women's collectives could use these tools for their own development. Thus, while the *Kalanjiam* seemed to play a formative role in establishing and supporting the centres, it is not clear how their collectives benefit through the range of services offered.

Gender in the development process: means or ends?
Another issue that emerged was whether the empowerment of individual girls was in some senses a positive offshoot of the programme or a deliberate attempt within the larger theory of change. While there was no doubt during the discussion or in the observation of the operators of the unique role they are serving and the increased confidence, self-esteem, boldness and status within the community, it seemed as though the choice of women as operators was not just based on the potential for their empowerment but also based on the need for the project to succeed. References were made to the fact that male operators are likely to leave the project after a short while if they secure a better salary elsewhere (which was seen as reasonable as males are the "main breadwinners" and women are "supplementary income earners"); that male operators do not have the same mind frame of social service and so, instead of canvassing within the community they may in fact hang around the centre with other male friends; that the *Kalanjiam* movement has established itself as a strong force upon which a new ICT project cannot but succeed; and that women by nature are enthused by new opportunities and are likely to embrace new technology platforms. All of these reasonings seemed to suggest that women are a critical instrument in the success and sustainability of the project, while also gaining critical knowledge and experiences for themselves.

Sustainability defined as by community appropriation and not financial viability
The very reason that the ICT project has moved from strength-to-strength such that DHAN has 162 centres running in Tamil Nadu and a majority of its staff consisting of girls who were selected in the very beginning to participate, reveals that the project has given much attention to building ownership amongst various stakeholders. From the operators' end, this has involved ongoing systematic efforts to develop their capacities and instill in them a sense of purpose towards a larger development cause alongside spurring healthy competition between them as a means to motivate them to do their best possible within their contexts. This kind of intensive support is coupled with ongoing efforts by DHAN representatives to experiment with and develop technology platforms that best serve the needs of people. An important factor in this regard is that the content and applications are not considered as ends in and of themselves but as possible solutions that need to be tested and adapted based on people's usage and appropriation of the applications. Further, this calls for systematic efforts to maintain people's interest in the services offered at the centre, through canvassing efforts on a daily basis or functions and events on an annual basis. All of these measures, while strengthening the long-term financial viability of the centres have more importantly ensured that they become critical spaces in the community that are owned and accessed by all sections of the population, including women.

Community Learning Centres and Trade Facilitation Centre of SEWA

Background: The Self Employed Women's Association (SEWA) was established in 1972 as a trade union for women workers from the informal sector. The main objectives of SEWA, centre on

full employment and self-reliance of its women members. The organisation focuses its advocacy efforts on policy regarding wages, insurance and equality. Ms. Namrata Bali, the General Secretary of SEWA says, "*We are an alternative to regular trade unions. Women are provided with alternative livelihood structures that help them stand on their own feet.*"

Currently SEWA functions through 18 sister organisations, most of which are structured as cooperatives, including the SEWA Bank, health and milk cooperatives. These cooperatives are federated for coordination and organisational purposes. SEWA believes that small targeted measures can make huge differences in the livelihoods of women. For instance, having a smooth flooring at home signifies a vast improvement in quality of tailored products produced by home-based women workers, and SEWA helps them address these special needs through its multi-nodal approach.

SEWA measures impact under two broad categories: full employment and self-reliance, with its activities centred on these categories. Impact indicators used under the category of full employment include steady income and ownership of assets, conceptualised at both individual and collective levels. Individual assets of savings and credit are addressed through SEWA Bank village counters and mobile banks. Members in rural areas organise into '*Bachath Mandals*' for promotion of group saving behaviour. Cooperatives formally own all the collective assets, including all equipment and technology applications used by SEWA. Along with its focus on women's economic stability, SEWA also considers the enhanced leadership skills and decision-making capabilities of its members as an indicator for self-reliance. Literacy is positioned as an important means for increasing self-reliance and is something that has gradually permeated into the basic strategies of the organisation. Members have recognised its importance and are willing to commit time and energy for learning. SEWA views the recognition of the importance of literacy itself as a significant indicator of increased self-reliance amongst its members.

Vision of Change: Under this broad mandate, ICTs were introduced into organisational functioning in the 1980s, when women members had access only to first-generation forms of technology. At that point, technology was perceived as a resource only for the mainstream society and poor women were completely sidelined from the new information and communication possibilities, leading to a complete lack of recognition of women's roles and functions in the mainstream. Within this paradigm, the idea then, according to Ms. Bali, was to "*use whatever was for the mainstream [also for women] so that women were not rejected on the basis of technology*." SEWA began experimenting with video as a means of identity, expression and awareness-raising. Further, given that the majority of SEWA women are non-literate, an organisational imperative related to ICTs is to disprove the myth that these women cannot handle technology. Through their experience, SEWA has shown that "*literacy is a significant but not necessary condition for women to appropriate and use mainstream technologies*." Yet, at the same time, SEWA's experience with various hardware and software platforms reveals that in their very design and application, these ICTs tend to be male-centric, and do not capture the roles, activities, capacities and needs of poor, non-literate women, working in agriculture or in the informal sector.

ICTs were also mainstreamed into SEWA strategies to bring about productivity and efficiency enhancement in its various activities, such as training, advocacy, mobilisation, and so on. SEWA adopts a shared ownership model for ICTs wherein the technology is placed in the hands of the

collectives. This process holds great potential for women's ownership and control of technologies and fits squarely in with SEWA's overall vision and indicators. Further, by enhancing the efficiency, productivity and output of systems, SEWA envisions the spread of technology amongst women members and the regularising of their use in ways that address women's needs, rights and empowerment goals (Gurumurthy 2003).

SEWA has well-developed video and radio interventions, but this study centres on their village information centres and e-commerce initiatives. The need for the village information centres came out of an education, science and technology annual meeting in 2000, in which young girls, mostly daughters of SEWA members, articulated their aspiration to be exposed to new technologies and computers, and to be trained in the skills required to secure the emerging job opportunities in banks, shopping malls, computers centres and so on. ICTs to them were more than just tools that *facilitate* their advancement; they wanted to embrace the new technology paradigm that would actually *motivate* them toward progress. SEWA therefore organised custom-made training sessions in computer literacy, English, life skills, and SEWA's core values for school-going girls and drop outs, which were piloted in Ahmadabad city due to the difficulty in getting instructors to travel to rural areas to provide training and certification. Of the 400 girls who have received training so far, 30 percent were placed within SEWA's cooperatives as well as with outside employers. This has proved to be a successful entry point for 'new' ICTs within the broader ambit of SEWA's employment and self-reliance strategies.

Alongside training courses for young girls, Community Learning Centres (CLCs) established in several districts of Gujarat (some in partnership with Indian Space Research Organisation (ISRO), provide a range of services and interface with the communities. A CLC is a nodal point for information in rural areas and usually services a cluster of villages through the use of ICTs. SEWA plans to establish computer centres in eleven districts of Gujarat and eventually link all 977 villages where it functions through information technology (Nanavaty 2005).

E-commerce activities were initiated in the context of the SEWA Trade Facilitation Centre (STFC), which was set up in 2000. The main goal was livelihood enhancement of women artisans and traders in the Kutch and Patan districts, by providing women better access to markets, better prices and more efficient production systems. ICTs were employed extensively in this process to facilitate and improve the processes of organising of women traders on a large scale. Carr and Chen report that "SEWA sees the Trade Facilitation Centre as a 'buffer', which absorbs the pulls and pressures of market forces and also guides and helps grassroots women to carve out a niche in the market (2002:24)." Within this context, the introduction of ICTs was a significant addition to the activities. Ms. Heena Patel of STFC indicates that during SEWA's earlier efforts with artisans, women advertised their work through trade fairs. ICT tools were introduced at STFC to allow for increased visibility of women's work in international markets that generated high demand, as well as to streamline and improve the efficiency of the spatially disparate production, collection and distribution chains.

Systems and Processes: CLCs at SEWA serve a variety of functions. All village level details are stored at these centres, ranging from historical, geographical, demographic, social and economic information. In addition to the data storehouse, SEWA introduced a set of ICT tools at these centres including computers, Internet, calculators and so on, and began to facilitate all SEWA

activities through these centres. The CLCs serve as a space for multiple purposes based on the needs arising from the women members and community people: as computer training centres; as grain banks and fodder banks; as a space for daily training sessions for *Aagewans* (grassroots leaders), field workers and organisers; and, as a space to improve women's occupational needs by addressing skill upgradation and new skill learning. Satellite communication facilities at the centres have enabled the introduction of two-way customised training sessions provided through a programme funded by ISRO in the areas of tele-medicine, natural resource management, education and e-governance. The diverse services and activities carried out at the CLCs means that the importance of these spaces in addressing the central livelihood and empowerment needs of SEWA members cannot be underestimated.

Computer training is not restricted to literate women alone, and older, non-literate, rural women also benefit from the training and facilities at the CLCs. Women come to the centres because they realise that IT is an all-pervading aspect of life even in the villages and are eager not to get left behind. Ms. Sharada, the chief operator at the Mehsana District CLC, says, "*This is the age of the computer* (*abh toh* computer *ka zamaana hai), and women are realising that their own progress would be difficult if they don't learn computers.*" However, women's involvement with the CLCs does not stop with computer training alone. The centres link with the governmental *Gram Mitra* job programme and help women apply for jobs online. Software available at the centres helps in determining market pricing of various agricultural inputs and finished products. The CLC also links with the SEWA's rural product marketing organisation, GramHaat, to facilitate the sale of locally produced products branded under the name of *Rudi*. Such processes of mainstreaming and structuring trade into a transparent system ensures that women gain a decent income for their produce and thus, such systems fit squarely within SEWA's larger goals of economic self-reliance.

Through their participation in non-technical training sessions, also organised in the CLC space, women have become more aware of key health and education issues. They recognise the roles of the Panchayats and responsibilities of leadership positions. The CLC has thus been transformed into a node of power at the village level because of its role as an information and knowledge centre. Ms. Sharada comments, "*Women who participate in CLC activities are referred to as the 'Internet women' and have recognition and status within the community*." This engagement with technology plays a key role in increasing women's agency and Ms. Sharada cites her own personal story to justify this: "*I am from the SC community, and initially was not accepted into all homes. But because of my association with SEWA, both as a field worker and as an IT operator, the community recognises and accepts me*."

SEWA goes a step further and actively intervenes at the grassroots level to widen user constituencies at the CLCs. The staff has a structured role in grassroots mobilisation efforts and in sharing the potential benefits of ICTs with women who have had no previous exposure. Ms. Sharada underlines this process, "*...for those women who haven't even seen this [ICTs], and don't even know where and how they can use it, and don't know how they can earn money from this… for these women, we hold meetings. We call them here to see what types of things can be done [with ICTs]. Then, that woman will send her children – daughters – or daughters-in-law to learn. We want the poorer and non-literate women also to learn, because only then will they know the potential that this thing can bring them*." While SEWA believes in mainstreaming ICTs into its work at the visionary level, there is an understanding at the implementation level that an ICT

intervention cannot be structured solely on the assumption that the 'need' or 'demand' exists within a community and that strategies can be structured based on that latest demand or expressed need. This is especially true for marginalised communities, whose exposure to mainstream advancements is poor, and whose perceived value of technology platforms to alleviate daily struggles is minimal.

SEWA also engages with issues of women's citizenship through interventions at the CLCs. Video screenings, training sessions and group discussions encourage women to take an active role in public spheres and institutions. For instance, Ms. Maya from Mehsana CLC recounted the story of a woman *Sarpanch* who had not attended a single village meeting, and whose husband attended as a proxy for her. She was merely putting her thumb impression on any document her husband asked her to. The CLC workers encouraged this woman to visit the centre, engage in group sessions and provided her with exclusive training on the functioning of the *Panchayat*. These exposure visits served to invest in her a sense of responsibility toward her role as a *Sarpanch* and she began accompanying her husband to meetings and later went on her own. SEWA's CLC model exemplifies an approach in which the effort is directed towards synchronising and harmonising 'online' technology platforms with 'offline' community processes.

The use of ICTs in e-commerce has played a crucial role in enabling the buffering activities of STFC. As discussed earlier, the STFC concept was based on the demand from growing markets and consequently, three product websites were set up for receiving and processing orders. This process, according to Ms. Heena Patel, saves time and energy, especially for bulk orders, and allows for the possibility of customisation based on the client's needs. The websites generate awareness in global markets and also provide publicity and advertising. An MIS is being developed to capture market-related information about buyers' preferences.

All functions of account management and records are computerised and carried out through the Ahmedabad office of STFC. The orders and timelines for production are communicated by the STFC team to the production unit. Sample pieces are produced in the STFC office and production kits are generated in the units and transported to artisans in rural areas. At the village level, craft leaders, who are experienced artisans, are democratically chosen and leadership is rotational in the villages. These leaders are responsible for rating artisan groups according to the quality of their production and for providing informal training to newer artisans. Their responsibilities also include organising the production system within the villages and liaising with the production unit at STFC. Once the order is completed, finished products are transported back to STFC for packaging and distribution.

This entire process is controlled through an MIS, which stores and tracks information on the artisans, their production times, and details on every stage of the production process. Access to these services at the village level is provided at the CLCs that hold the software and data-entry facilities for MIS-related tracking and updates. Any progress made at the artisan level is inputted into the CLC systems and the information is immediately available at STFC. The power of this form of real-time communication and information processing cannot be underestimated in the world of fast moving markets and dynamic changes in demand.

The e-commerce project has been a resounding success. In its first 18 months, STFC's annual sales grew by 62 percent~~%~~ and exports by 311 ~~%~~percent over the preceding year (SEWA Annual Report 2005). In May 2003, SEWA decided to register STFC as an independent company, with the member artisans as shareholders, to enable it to grow even faster. ~~80%~~Eighty percent of the cost price of products is directly absorbed by the artisans (Treacy 2003). With the new found access to large markets, artisans have realised the actual value of their work, which they used to earlier sell at throwaway prices. Initial hiccups were experienced during adoption of the MIS, but with computer and training, the artisans have become comfortable with the system and recognise its value in creating an open and transparent system for monitoring and tracking of their work and payments.

Outcomes: As reflected above, SEWA's CLC centres are not mere computer education centres, but form a holistic space in which information and communication activities are carried out in the broadest spectrum of their understanding. The activities may entail the use of newer technologies, such as SEWA videos for training purposes and satellite communication for awareness generation and discussion on development topics, but continue to use the more 'traditional' ICTs, including lectures, peer-to-peer sharing, booklets, and so on. More specifically, the CLC is the grassroots interface for e-commerce activities, and is thus positioned as an important resource for women's self-reliance. The availability of a space with this broad development ambit, and that is owned, run and monitored by women members, creates a new perception of SEWA as a central information and communication hub.

SEWA emphasises the importance of an external resource agency that can support the activities of local women through the development of content; negotiation with institutions such as banks, local government bodies and the market; awareness generation and training on new trends, products and opportunities and other key areas that local women may not be able to handle completely on their own. Thus, while continuously pushing for local women's ownership of ICT spaces, participation in ICT activities and use of ICTs to generate and share knowledge, SEWA also prioritises the employment of ICTs to bring in external knowledge, linkages and networks to improve women's wellbeing and self-reliance.

Assessing the Project from a Gender Lens

ICTs within a holistic strategy of empowerment

When compared to the ad hoc manner in which ICT projects have often been launched at the community level by external organisations or the way in which ICT activities have been loosely adopted by existing grassroots organisations, SEWA's strategy reflects an approach in which ICTs have been systemically adopted as the need arose from its member community and based on a strong conviction that these ICT tools can help achieve its goals of full employment and self-reliance more meaningfully and effectively. Acknowledging the empowerment possibilities of ICTs, SEWA has chosen not just to experiment with the new technologies available in order to merely test out their stand-alone possibilities; instead, it has embraced various ICT tools – video, radio, computers, Internet, PDAs, mobile phones – only if it believes that they can be integrated and sustained and if they can get the women members to contribute and participate in the initiative. SEWA recognises that ICTs can work only if they are placed "*within the activities of larger collective or group"*; where women are trained not just in IT, but also in other non-

technical areas; where appropriate and timely content is available; and, where there is a clear vision for the future and for the continuity of the initiative. This has important positive ramifications on the impact and sustainability of SEWA's ICTs activities.

ICTs as a new space for women to capture

A significant aspect of SEWA's adoption of ICTs is that while recognising the efficiency, transparency and enabling characteristics of new technologies, a critical reason for embracing ICTs is that "*Yeh technology ka zamana hai,*" [this is the era of technology] and women, who have historically been sidelined from technological advancements or have been recipients of 'hand-me-down' technologies, should not be left behind this time as well. It was important therefore for SEWA women to be able use the tools of the mainstream, and control them in their own ways and towards their own ends. Use of ICTs was seen as a means to bring visibility and worth to women's issues in the mainstream. Yet at the same time, Ms. Bali cautioned that increasing use of ICTs should not come at the cost of efforts to spread literacy, and organisations interested in adopting ICTs should also invest in basic literacy when working with the poorest of the poor women.

Ownership not just of the tools but also of the design

SEWA's strategy clearly reflects its vision of women's collective ownership of assets, including technology assets, and of creating uses for these assets around women's expressed needs. Yet, the conversations with representatives, especially in the area of e-commerce, revealed that ICTs tend to be incorporated as management tools that bring greater efficiency and organisation into systems of production. There seemed to be less emphasis on women's direct involvement and control over technology usage decisions (on the MIS for instance) or on product design decisions that use new technologies. This seemed to suggest that while the e-commerce venture indirectly sets into place processes that enable women's economic empowerment – through decent wages – and citizenship – through democratic processes of decision-making at the village level – the long-term, sustainable ownership and management possibilities over these technologies has not been considered beyond the coordination levels. While Ms. Bali acknowledges that "*there will always be a need for some kind of external inputs and guidance*" particularly in the fast changing world of fashions, the test remains as to how non-literate women can be systematically equipped to control and lead decisions on product designs using new technical platforms.

Shaping the market as a women-friendly space

A central question in the mind of Ms. Bali was "*How to make their products marketable without compromising on ethics*?" As an organisation deeply centred on women's rights and struggles, wherein the greatest struggles faced by women revolve around their (lack of) integration and participation in the market sphere, this is a critical question that SEWA must contend with. This meant, for example, that when SEWA wanted to sell its video footage to local channels, it had to ensure that the commercials played during the programme do not undermine its overall values, and this has led SEWA to encourage its sister cooperatives to produce ads. Similar situations were reflected in the field visit, where SEWA's close tie-up with large corporations was clearly visible – and whether it was Microsoft's Unlimited Potential programme being used for e-literacy at their CLCs or in ITC being a major buyer of SEWA's Rudi products. This brings up the larger issue of market ethics within the context of women's rights movements like SEWA. On one hand, engaging with key players of software and agricultural markets, whose policies have been much critiqued for their direct and indirect effects on the poor, goes against the grain of SEWA's own

concerns with both technology design elements and policy-level decisions relating to gender-insensitive and anti-poor technology. On the other hand, a question arises on whether a grassroots women's organisation like SEWA, with its historical pursuit of assisting women's struggles for a decent life, can, in fact, re-shape and re-define the market system, which has thus far been unfriendly and alienating to women, and using its collective strength of several thousands of members, confront the market on terms that are more gender equal. This seeming contradiction also points to the complexities in negotiating knowledge and power in ICT projects especially where monopolistic or oligopolistic markets create dependencies and lock-ins and thus undermine freedom and choice in a larger developmental sense.

CHAPTER 5: TOWARDS ANALYTICAL FRAMEWORKS FOR GENDERING ICTD

The aim of the study has been to research existing ICTD interventions on the ground to explore how gender-inclusive principles are, and can be, incorporated into ICTD projects. These interventions may or may not be specifically oriented towards gender-equality objectives; yet, the aim is to map their basic approaches and strategies within the larger development context and policy environment to conceptualise and understand how these affect women's empowerment and gender equality outcomes. The study offers some new ways to position ICTD and women's empowerment and proposes an analytical model that can be used to assess ICT policy frameworks as well as project design, implementation and review along gender-inclusive parameters. Based on learnings from the initiatives, the study also attempts to provide recommendations for adopting a gender-sensitive approach to ICTD projects, which also concerns wider institutional change leading to gender power shifts.

In this chapter, the findings are synthesised to enable a clearer grasp of how gender-related change actually occurs in ICTD projects, and what may be the challenges in obtaining such change.

Towards such a synthesis, this chapter seeks to juxtapose the findings that have emerged with a conceptual framework of women's empowerment. What kind of paths in ICTD are empowering to women and what are the dilemmas and difficulties along these paths, are the questions discussed in this chapter.

How Projects have Addressed Gender for Positive Outcomes? What Works?

1. Factoring women in project design

The starting point of gender-related change has been the acknowledgment of gender – both as a social reality and as manifesting in particular ways in the local context. Situating gender concerns as a (if not 'the') project priority is essential in making a difference to gender-related outcomes. In the projects studied, gender was understood, defined and accounted for in varying nuances – in simply acknowledging that women were an important "*parameter*" in the development process in Abhiyan; in the recognition of the women's SHG movement as a useful platform to launch an ICTD initiative as in DHAN and eSeva; in the assumption that a high percentage of women *Panchayat* representatives itself would ensure sufficient gains for women in a project that is situated in, and monitored by, local self-governance bodies in Akshaya; or in the belief that it was important for women to "*use whatever was for the mainstream*", as in the case of SEWA. The study, however, suggests that the understanding and articulation of gender by project owners – government or non-government – may not be sufficient to ensure positive change unless specific measures are designed and implemented in this direction. Thus, an assessment of gender relations in the local context is an essential starting point – but needs to be followed by steps to take up gender concerns within project implementation.

2. ICTD as a springboard for women's empowerment

Clearly, the conception of ICTD as a springboard for moving towards gender equality has enabled the harnessing of a new development space specifically for obtaining gender-related outcomes. By gendering the ICTD space, some projects have constructed the 'ICTD opportunity' as a way to rethink conventional development strategies for women's empowerment and to challenge and subvert traditional notions of gender. These have pertained to creating new enterprise options for women (through ownership of centres in the eSeva case); or new institutional mechanisms, like kiosks and telecentres, with a 'female' face (as seen in Akshaya's effort to have women master trainers in centres that were not run by women); or co-opting local women's collectives into the larger ICTD project design as a way to address their needs and interests (for example, the involvement of *Kalanjiam* members in DHAN's case). What these 'springboard' strategies have done is to facilitate changes to women's identity, create new spaces for women's local leadership and set up a precedent for new social roles for women. While some of these efforts were part of the 'top down' architecture of the project, such an envisioning of the ICTD opportunity for gender-specific outcomes was not always catalysed through such a conscious design. It was carried out sometimes even without a 'grand plan', but as a step taken by women actors – for instance, kiosk operators – in the project space, to secure greater participation by women in the community endeavour. There are multiple instances of such initiative: the efforts by Akshaya entrepreneurs to secure women's enrollment in e-literacy drives, by visiting each household or taking computers to *Madrasas;* or in the entrepreneurs' efforts to secure job opportunities for vulnerable women and marketing options for women farmers through E-Krishi; the interactions with local SHGs by women members of Setus or women operators of Mahiti Mitra kiosks to encourage their participation in the kiosks; the repeated initiative on the part of DHAN operators to interact with village women and encourage them to try out tele-conferencing facilities; and by SEWA operators to enthuse members to take advantage of the IT opportunity or use IT tools in the betterment of their lives (as in the case of the *Sarpanch*).

The study also suggests that gendering the ICTD space may not necessarily promote women's claims in the development process unless the latter are defined as strategic and ongoing priorities in an initiative. This was articulated, for example, in the assertion by Ms. Bali of the relevance of STFC that "*there will always be a need for some kind of external inputs or guidance*" in the fast-change world of fashions. A contrary case is that of eSeva, where a weakening of certain project elements due to changes in leadership, resulted in the collapsing of the marketing gateway meant for SHG women as well as the grievance redress system that was used by large numbers of women.

It would augur well in the project design, therefore, to understand how the technology opportunity for community development is also a space for changing social relations, shifting gender roles through new identities and ascriptions, and bringing about "unforeseen shifts" as has been highlighted in the study of the SARI project by Parthasarathy and Srinivasan (2006). Engendering ICTD, in this sense, is more than treating women as users, and is a strategy within the new ICTD framework for women to become equal participants and claimants of development processes. This strategy also has the potential for women to become active in agenda setting processes in local development.

3. Institutional structures for gender equality

Projects have created new, and built upon existing, institutional structures to formalise processes and obtain strategic outcomes for women's empowerment. These have ranged from 'moulding' the operator to perform her roles as a community mobiliser and social change catalyst in the DHAN project; in the establishment of e-literacy as a necessary and basic skill for the community, including women, to integrate with the larger technology-driven world in Akshaya; or in the setting up of external websites and an internal MIS to facilitate more efficient production and marketing of goods being produced by women artisans in SEWA. Invariably, these mechanisms to formalise gender-related strategies within ICTD projects are also contextual innovations that are constantly being reassessed and fine-tuned. In the case of DHAN, the lack of community involvement in the use of the Internet for e-mail purposes led them to think about its use in tele-conferencing with development experts and government officials; and in the case of E-Krishi, the focus on progressive farmers and low rates of participation of women in the project has led to efforts to strengthen linkages with Kudumbashree SHG production units. It is noteworthy that such institutional measures go a long way in strengthening the agenda of engendering ICTD or claiming the technology opportunity for women, a point discussed earlier. One-off, ad hoc or informal measures for gender-related outcomes run the risk of being upstaged – as is visible in the project weakening as a result of the transfer of project champions in government or where women operators' ingenuity or innovations remain peripheral to the main project outcomes.

A recommendation, therefore, is that while specific measures for triggering positive change are a starting point, the creation of structural and institutional alternatives for renegotiating gender relations must be seen as intrinsic to the development impact of ICTD projects. The gender opportunity in ICTD cannot be institutionalised without formal mechanisms that can constantly monitor and operationalise the springboarding potential of ICTs. This was articulated in Rao and Kelleher (2005) as the "supply side" changes towards women's empowerment agenda.

4. ICTD as a social infrastructure

As has been described in chapter 2, where a typology of ICTD initiatives is outlined, ICTs may be seen as holding the potential for institutional transformation as well as for realising the rights of marginalised social groups. This requires that ICTs are seen not just in their potential for economic growth and efficiency, but as a social infrastructure with the potential for effecting power shifts. The location of gender concerns in ICTD projects needs to go beyond a preoccupation with numbers or a co-option or instrumentalisation of women, and instead, needs to be conceived in terms of how the emancipatory or empowering potential of ICTs can be fostered.

The socio-cultural meanings of ICTs derive from the need and objective that they are seen to be addressing. For instance, in the projects studied, ICTs had many 'primary' meanings; they were an information platform for post-disaster reconstruction, a conduit for communities to connect with governance institutions, an enabler of women's efforts to access mainstream markets, and so on. These different meanings together designate ICTs as an essential and basic social infrastructure. Such a characterisation of ICTs also opens up spaces for the agenda of equity and justice. This is revealed in the case of Abhiyan, where the Mahiti Mitra centres are perceived as hubs of

information provision and institutional linkages relating to development, from which the community and "*even poorer people*" can "*get all types of information*"; or in the establishment of DHAN's telecentres as 'Thagavalagams' or 'information homes' through which the community can access information "*the right information*" and articulate their development needs through both online and off-line platforms.

Such a social infrastructure approach carries important policy implications to create the necessary conditions for fulfilling the gender equality agenda. For instance, in the DHAN case, the operators are women from disadvantaged social backgrounds and their leadership is actively encouraged; SEWA built its ICT initiatives on pro-women institutional arrangements. However, these spaces for equity and social justice can get diluted unless they are carefully nurtured and sustained, as is revealed in E-Krishi's almost exclusive emphasis on progressive farmers, while the larger Akshaya model itself had strong elements of social inclusion; or in the dissatisfaction with the RSDP centres' financial viability in eSeva despite their potential impact on women operators' identities and local community development.

Significantly, what is also observed in the projects is that the recognition of ICTs as a social infrastructure does not necessarily translate into outcomes for gender equality, which needs to be seen as an agenda in its own right. The potential of ICTs to empower women therefore needs a symbiotic process wherein strategies for women's empowerment go hand-in-hand with a social infrastructure approach to ICTs.

Gendering ICTD – What does it Entail?

The case studies in the research suggest how such empowering outcomes are obtained through a set of approaches that span two axes. The first axis encompasses a range of actions, from factoring gender as an intrinsic dimension of social relations and structures at one end, to making women's ownership and participation in new technology platforms an important goal, at the other. On this spectrum, ICTD projects can be located at varying points. Similarly, the other axis captures positive outcomes spanning the continuum, from informal and ad hoc measures for women's inclusion to formal institutional measures. While the former spectrum of action reflects the positioning of gender relations in the project process (pertaining mainly to the theory of change on gender discussed in the findings), the latter refers to the frameworks used to address gender inequality. When the two axes are seen as intersecting, a policy and action framework that captures the array of options can be observed, as in Figure 2.

Figure 2: Action for Empowering Outcomes towards Gender Equality

The set of possibilities that seem to work for gender equal outcomes, discussed above, can be obtained through a number of different operational strategies, as have been thrown up in the findings of this study. They may include:

- Targeting women for skills and capacities
- Quotas for women in enterprise models
- Preference for women from disadvantaged social groups as owners, operators or users of ICT services
- Carving out platforms for the identification and articulation of gender agenda (creation of women's user groups, use of telecentres by and for local women's groups)
- Social orientation of project staff/team and personal commitment to address gender concerns
- Integration of women's grassroots institutions in governance and e-governance reform
- New opportunities for financing pro-women strategies
- New mechanisms for giving a fillip to existing strategies for women's empowerment (such as livelihoods, grievance redressal, access to entitlements, and so on)
- Linkages with local institutional processes for gender equality (project implementation along with Panchayats)
- Project monitoring structures with a mandate for addressing gender issues.

These strategies may be formal or ad hoc institutional arrangements; and may or may not emanate from an informed and considered assessment of gender relations in the local context with an overall vision for women's empowerment.

It is possible therefore that in Figure 2, any of the above strategies can be situated in any of the four quadrants. While it is fairly clear that being in quadrant A will most likely only result in only

some benefits for women, and leave untouched the structural issues with respect their rights, strategic choices can and should be made to move towards quadrant D. This quadrant, capturing formal institutional change that ensures women's interests, through their control over processes, is the strategic objective to be pursued for gender equality. However, projects may need to, and often do, move through different quadrants, such as B and C, and adopt tactical decisions to even stay in certain quadrants, while mediating the given local context and its inherent dynamism. It is also not unlikely that even when an ICTD project begins in the quadrant D, the gender agenda gets diluted or dislocated either because of the weakening of new institutional innovations and mechanisms, or community backlash to women's leadership, or even a retrograde policy measure from the top.

Thus, while pointers on 'what works' can pave the way for effecting lasting gains for gender equality, it is also necessary to undertake a stocktaking of the risks and challenges involved in engendering ICTD projects.

Designing ICTD Projects for Gender Equality

Making change happen – negotiating the complexities from vision to action

Projects that begin with a robust vision of effecting gender-related change can suffer setbacks in implementation when individual energies that keep gender agenda alive suddenly fizzle out. While this usually happens when project architects leave the project, it is equally an issue if pro-women local leaders and implementers shift out. The other related challenge is that the vision on gender equality and the analysis of gender relations in respect of the local context are diverse across individuals within projects, a fact that is demonstrated in the findings of this study. Often, the absence of formal mechanisms for promoting gender-related outcomes – where the vision gets translated into concrete strategies – results in a lack of responsiveness to local realities and in the event of transition, leads to a sudden closure of a critical project process that may have contributed towards gender equality goals. Thus, formal mechanisms – policies and platforms – are necessary to mitigate such risks and help navigate transitions in leadership and implementation.

However, in respect of gender-related change, action is predicated upon vibrancy, dynamism and ingenuity that are often manifest *beyond* formal mechanisms. While vision is non-negotiable and requires projects to formalise their commitment to gender equality, there is no doubt about the vital role of the life and energy that all actors bring to the project space. As conditions on the ground unfold, the ICTD opportunity, which is often nebulous and a matter of trial-and-error, requires interpretation and reinterpretation in many ways. In the case of DHAN, for instance, where the mandate was to make technology accessible to the local community for their development, this involved a re-assessment of the use of ICT tools in light of their relevance for creating linkages with government officials (through tele-conferencing). In the case of Akshaya, where the broad mandate for 100 percent e-literacy did not bring community women to the Akshaya centre to take advantage of this opportunity, it meant that operators had to think of innovative strategies to raise women's awareness of and participation in the e-literacy programme.

The vision to action continuum poses a constant challenge to all projects, and one of the greatest risks to gender may be in the equity deficit in project vision, objectives and strategies. Such a deficit, in respect of gender can make for a situation where the ICTD opportunity is not harnessed

for women's empowerment; equally likely, women's subordinate status may be further reinforced through the project's tacit 'neutrality'.

Preserving and promoting women's interests within the relationships ecology

Gendering ICTD is about understanding and acting within an ecology of relationships where power is constantly negotiated. The ecology of power in the local context is of paramount relevance; and the project design for gender equality has to be cognizant of this. Projects often do not succeed in building stakes for women, or in consciously ensuring a mechanism where women can participate and set the agenda for their development. Operators may be women, and yet, they may not have a forum to build capacities and to discuss their insights on local conditions relating to gender issues. Similarly, entrepreneurship is a welcome horizon for the advancement of women's social status, and yet women entrepreneurs may simply have no influence over the direction that an ICTD process has taken on the ground. Islands of individual empowerment do impact the power and information ecology at local levels (as discussed in the previous section) but social change for gender equality is also about agenda setting by women. There is a need to account for the heterogeneity of the local community and not just emphasise 'local' ownership but also acknowledge right from the start that the 'local' is in fact a sum total of various power interests which are to be negotiated in favour of women.

As suggested in the typology in Chapter 2, ICTs can be seen as a catalyser and enabler of women's rights. But ICTD projects runs the risk of marginalising women's interests if they if they don't go beyond mere outreach, targeting, co-option and instrumentalisation of women, either as passive users or as operators confined to the lowest rung of the project hierarchy. The key challenge here is to open up spaces where the ICTD project can lead to greater political gains for women. For instance, the involvement of SHGs may be a good starting point for gendering ICTD processes; however, the empowerment agenda needs to be developed such that the relationship between the operator and the SHGs are strengthened in the direction of allowing women's constituencies, as central stakeholders, to shape the directions and outcomes of the project.

The relationship ecology also involves how ICTD projects negotiate their agenda for women's empowerment and social inclusion within the context of the multiple interests – only some of which are local. From policy prescriptions made by 'people at the top' to funding agencies supporting the project, there are interests to be accounted for, not all of which may unconditionally support the women's empowerment agenda.

Further, there are dependencies between the legal, policy and political regimes and the local processes for women's empowerment. This is very significant in the ICTD issue, particularly where technology and its meanings have been shaped and guided by private interests. The fundamental challenge in ICTD may then be one of averting a 'clash of models' and of dealing with an institutional ecology that necessitates the conceiving of women's empowerment within the ICT marketplace. How then do projects address women's claims to ICT spaces, when these spaces themselves may deprioritise gender concerns, trivialise women interests, or at another extreme, be completely antithetical to social justice? Ms. Bali articulated this dilemma, in her question, "*How to make SEWA's products marketable without compromising on ethics*?"

Resolving the sustainability conundrum

Where development projects attempt to put in place basic processes and structures for moving to an ICT paradigm, the focus on generating revenue through ICTD initiatives can become an unnecessary distraction. ICTD projects, as mentioned earlier, need to make meaning in the local context and this is an issue fraught with challenges. From the setting up of the hardware to building basic capacities of community members and ensuring positive outcomes, project processes need to veer dynamically and balance multiple considerations. These processes, resulting in the rooting of ICTs within local meanings, require significant investments, most importantly that of time. How development itself is defined has important ramifications in this balancing act as it leads to different models that varyingly prioritise social justice and equity.

The imperatives for a quick uptake of ICTs and a rapid diffusion may drive ICTD projects towards seeking greater efficiencies – more kiosks, more users, more transactions, and through all of this, more income for the 'entrepreneur'. Success parameters begin to be seen in only those meanings of ICTD that have monetisable value. This negates alternate models that are more time-intensive and experimental and which attempt to gradually enable the community to participate in, and take control of, information and communication processes centred in their own development priorities (discussed in the previous section as the social infrastructure approach). This study suggest that such a push for efficiency often eschews a development model that flags the issues of equity and inclusion. Representatives of projects articulated that a premature emphasis on business models and financial viability could vitiate the orientation to social justice and equity, either by weakening the focus on *"user sustainability"*" and *"service sustainability"* in the case of DHAN or by *"hampering"* the basic rights and social development opportunities of the poor, as in the case of Abhiyan.

These concerns may be seen as costly 'distractions' where it is indeed otherwise possible to build 'successful' models that do not involve the pains of participatory development processes. Risks to project continuity, for instance, were contained in some initiatives through simple choices – of selecting entrepreneurs who came with a certain skill sets and were willing to make the financial investments; of pushing those 'services' that ensured growing revenues to the operator and increased popularity of the centre, eclipsing the strategic information and communication needs of the community or of specific marginalised groups; and finally, of declaring those centres defunct or 'sick' that could not keep themselves financially afloat or of jettisoning those project elements that were resource intensive and non-profitable, such as the grievance redressal mechanism, the market linkages established with local women's groups, the dissemination of development information modules, and so on.

While certain projects gave considerable attention to building processes for inclusion and equity, not all focused on gender equality. Some saw the gender equality agenda as coming in the way of building a social infrastructure approach. Abhiyan, for example, which was strongly grounded in a community empowerment approach, had not designed specific strategies to foster the participation of women's groups. On the other hand, SEWA's emphasis on constructing the CLCs as a space not only for computer and job training but also for capacity building, discussion and agenda setting on key women's issues, had a strong impact.

The research study points in several instances to how gender may be seen as a potentially derailing issue, complicating the process of negotiating other challenges to the mainstreaming of ICTs in local development. Gender mainstreaming and ICT mainstreaming are posited as mutually untenable and the political process of renegotiating gender is subordinated to the development project of mainstreaming ICTs. A gender 'neutral' approach is seen in some projects as a strategic necessity, expressed in different ways by project representatives: "*If the focus was on making centres accessible to women, then we could not have achieved sustainability of the centres";" This is a technology initiative, and we should not restrict its use (to women)"; "As a pilot project, no particular criteria was laid out; as initial investments were heavy, we had to get healthy entrepreneurs"*.

The choice of relegating the gender agenda to the backburner reflects operational dilemmas; however, it needs to be recognised that a project trajectory that initially deprioritises gender may end up permanently compromising the technology opportunity for gender equality. The risk then is not only of women's marginalisation but also of the huge opportunity cost involved in relinquishing the gains for development that are linked to women's empowerment.

Reconciling Policy and Practice in ICTD for Gender Equality

This research study began by looking at how outcomes for gender equality are obtained in ICTD initiatives, examining initiatives that represent a range of strategic choices for development and gender. Contingent upon the construction of gender in the project and the specific measures adopted for women's inclusion and empowerment, (something that has been discussed in detail in the findings and reflections) varying outcomes in changes to gender relations are discernible in the projects studied. Furthermore, such changes have clearly been non-linear and co-constituted by other intervening variables. In effect, gender relations in the local context have not only shaped the larger technology-induced change process, but gender-related outcomes have also been impacted through the life of a project in different ways.

Women's empowerment takes place when collective action for justice by women and an enabling institutional architecture come together to create a positive spiral. This study suggests that empowerment of women in the ICTD context can be understood along a matrix with intersecting axes of formal and informal change and of individual and institutional change. This matrix is represented diagrammatically in Figure 3.

Figure 3: An ICTD Model for Women's Empowerment: What Kind of Change is Needed?
Adapted from Rao and Kelleher (2005)

Quadrant A describes individual change through informal social processes and could be an example of a new culture of information or a new information literacy. Here, a woman needing information on entitlements begins to approach the local telecentre rather than go through traditional power channels. The changes in this realm may be reflected in many other illustrations, but essentially refers to how the consciousness of individual men and women in a particular society shifts with the emergence of a new technological paradigm. Quadrant B connects directly to individual access to resources, and in the ICTD context, this connotes access to critical information and communication resources and how formal institutional mechanisms shape individual access to the same. Enabling policies of selecting women as infomediaries would be an example in this direction. The third quadrant, C, encompassing informal and institutional change is the domain of cultural norms and practices. Empowerment in this area takes place for instance when ICTD initiatives impact deeply entrenched biases against women. Simply training women to operate computers or constructing women as the main drivers of an ICTD project can challenge such deep-rooted biases. The realm of formal, institutional change, quadrant D, relates to the policy frameworks that bring about deep-seated institutional change, whereby ICTD projects may be seen as a way to usher in new institutional rules; where policy-level decisions may mandate that women's SHGs run telecentres; or where local authorities' consultations with women using tele-conferencing may create a new institutional practice in governance when supported by appropriate policy measures. These aspects of the policy architecture constitute a significant dimension of the change process for empowerment. Needless to say, the change process adopts a non-linear path, beginning in one quadrant or sphere and proceeding to the others based on several intervening factors.

While change processes can be mapped through the matrix above, a critical question that remains is how change can be directed towards the end goal of women's empowerment? The following diagram attempts to answer this critical question.

Figure 4: Directing Change for Gender Equality in ICTD

The findings of this research study reveal that in techno-social paradigms, there is bound to be a tension between technology diffusion or reach and the social appropriation of technology towards goals of justice and equity. This tension manifests in specific outcomes depending, inter alia, on the policy processes that mediate the trade-off and the social actions that push for women's greater control in the techno-social paradigm (depicted in the diagram above). ICTD and ICT policy processes are in fact political choices about the kind of information society envisioned. These choices play out in project design and have a crucial role in balancing imperatives of diffusion with those of equity.

The embedding of technology in the local context acquires specific gendered meanings depending upon women's collective action around technology or the bottom-up processes and the institutional and policy frameworks or the top-down measures in respect of technology. In other words, within the larger social flux signified in the tension between the diffusion of technologies and their social appropriation, the realm of possibilities to determine change processes for gender equality is significantly shaped not just by local action but equally significantly, by larger policy choices around ICTD and ICTs.

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Annexure

1. Persons Interviewed in each Project

eSeva (visit conducted between February 19-21, 2007)

1. Mr. Sanjay Jaju, Municipal Commissioner, Hyderabad
2. Mr. Lav Agarwal, Collector, West Godavari District
3. Mr. Gangadhar Rao, Chief Informatics Officer-National Informatics Centre
4. Mr. G.V.S.R Sarma, District Informatics Associate – National Informatics Centre
5. Mr. N.S. Satya Sai Baba, Hyderbad
6. Ms. Nagashiromani, Kiosk Operator, Dendaluru
7. Ms. Venkatalakshmi, Kiosk Operator, Nidavadolu

Akshaya and E-Krishi (visit conducted between February 22-25, 2007)

1. Mr. Sivasankar Nair, former Director of Kerala State IT Mission
2. Mr. T.K Manzoor, Director, Akshaya State Project
3. Mr. Salim, District Secretary of Akshaya, Malappuram
4. Prof. C.K. Peethambaran, Virtual University for Agricultural Trade and Consultant, E-Krishi Project
5. Mr. K. Anvar Sadath, Manager, E-Governance and Head, E-Krishi
6. Ms. Valsamma, Assistant Director, Marketing, Department of Agriculture, Malappuram District
7. Ms. Jassila, entrepreneur, Kacheripadi Panchayat
8. Ms. Sajina Alukkal, entrepreneur, Marakara Panchayat
9. Ms. C.G. Meena, entrepreneur, Tirur Panchayat

SEWA (visit conducted between February 27-March 1, 2007)

1. Ms. Namrata Bali, Secretary General, SEWA
2. Ms. Shanta Koshti, SEWA Research
3. Ms. Sharada, IT Trainer, Mehsana District
4. Ms. Heena Patel, SEWA Trade Facilitation Centre
5. Ms. Siddhi, Gram Mahila Haat

Kutch Nav Nirman Abhiyan (visit conducted between March 2-5, 2007)

1. Ms. Sushma Iyengar, Director, Kutch Nav Nirman Abhiyan
2. Mr. Manoj Solanki, Kutch-Link
3. Team members of Setus and Mahiti Mitra Operators of Boladi, Adesar and Samakhyali Setu

DHAN (April 12-15, 2007)

1. Mr. B. Muthukumarasamy, Project Executive, DHAN Foundation
2. Mr. Premanand, Team Leader, DHAN Foundation
3. Ms. Rajee T, Kiosk Operator,
4. Ms. Radhika, Kiosk Operator

2. Interview Questions Posed to Project Visionaries, Implementers and Kiosk Operators

A. Project Visionaries and Implementers

I. What is the history and background of the project? What are the larger fields of intervention, major priorities and strategies used so far, main geographic areas covered and key constituencies in the project?

II. When and how did the project begin? What was the timeframe of the project, who were the key persons/ stakeholders behind its initiation (or, which departments in the case of a government project), what were the vision/ mission/ goals/ objectives, and what was the scope of impact?

III. What was the broader development theory of change in the project? What was the driving force behind establishing the project and what did the project set out to achieve? What were the existing conditions of the local community and the power politics within the community? How was the project going to make a difference in this community context and why was this approach considered most appropriate to bring about change? Why was the particular approach to ICTs chosen given the local context?

IV. What was the gendered theory of change in the project? What were the existing information and communication processes at the time, what were the gender power relations in the community? How did the project attempt to address this context and what were ICTs expected to do in the project for women's empowerment?

V. What kinds of choices were made in the design and implementation of the project? What were the main ICT interventions of the project? How were choices around infrastructure, hardware, software, connectivity, content, capacity building, and so on, made? What kinds of linkages were built with external organisations, departments, private bodies, banks, and so on as part of the process? Who were the various stakeholders involved and what were their roles and levels of participation in the project? How were operators selected and what were were the main criteria in their selecftion? How did the project evolve as it was rolled out and what major decisions were taken on the basis of field realities or technological findings and so on?

VI. What kinds of choices were made in the project design and implementation with regard to women? How did the project involve women in different stages and in different levels of the project? How did the project address women's needs, networks, interaction with formal institutions, leadership, ownership, identities, roles and access? How did the project address different constituencies of women – entrepreneurs, women's collectives, community women and vulnerable women?

VII. What is the development impact of the project? What are the achievements and outcomes of the project, particularly in relation to the project objectives? What innovations were infused, what were the unintended outcomes? What additional factors would have better aligned the outcomes with the objectives or the local community context? Specifically, what were the impacts on development and social indicators as well as on power relations and institutional structures in the community? What were the impacts on stakeholders of the project?

VIII. What is the impact of the project on gender issues and women's empowerment? How did the project impact women's needs, networks, interaction with formal institutions, leadership, ownership, identities, roles and access? How did the project impact different constituencies of women – entrepreneurs, women's collectives, community women and vulnerable women?

IX. What are some insights and learnings from the project? What did the project reveal on gender issues and women's integration in ICTD projects? What were learnings on ICTs as a means to bring about change and based on this, insights at the policy level? What are learnings in terms of sustainability of leadership, finance and project elements?

B. Project Implementers

The same questions above were posed to implementers of the project. The difference was in *lesser* emphasis on theory of change for development and gender (which was still captured to capture continuity in vision of change across various levels) and *greater* emphasis on project design and implementation based on the implementer's own experiences and job description. Impact and insights related questions were retained as above.

C. Women Operators and Entrepreneurs

I. Describe your background and how you got involved in the project? What were you doing before the project commenced, who prompted you to join, why did you choose to get interested in this project, what was the family and community situation at that time and their reactions to your interest in taking up the project?

II. What kind of support did you receive in the initial stages? How did the organisation/ department support you, what role did your family, community, local organisation or women's collectives play, what kind of training – technical and non-technical – did you receive, what kinds of financial support, incentives or subsidies were provided in the initial period, and what sort of linkages were important at this stage?

III. Were you involved in the design of the project? Or other aspects such as the determining the area of work and nature of the intervention or were all decisions relating to implementation already made?

IV. Describe your daily and weekly activities? What kinds of roles do you perform as an operator, what is the nature of your interactions with women's collectives or community women, or with community organisations, or with external agencies and NGOs? What kinds of organisational decisions to you make and what kinds of innovations do you bring into the project?

V. What are the challenges you face in your work? What issues must you confront at the family level and community level? What are the constraints you face as a woman?

VI. How has the project impacted you in various ways? Do you see any changes in your personal situation or identity, in your economic situation, socio-cultural situation and political situation? How has participation in this specific project impacted you, in relation to how you are today compared to how you would have been if you hadn't got involved? How do you compare yourself with those women who are involved in non-ICT activities? How has your status as a woman operator impacted your position in the community and the way in which you are perceived in society?

VII. How has the project – through your role as an operator – impacted women's collectives, community women and other members of the community?

VIII. What are your insights based on your involvement in this project? What are your future plans, will you be able to carry forward if the support from the organisation or department is withdrawn or reduced? How can the organisation or department better support you, and the centre, and bring about better outcomes for community women? What do you think that ICTs hold in them that can be potentially used for women's empowerment?