Public-Private Partnerships and Information Technologies for Development in India

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Abstract— This paper critically examines the theory and practice of public-private partnerships (PPPs) through the example of information and communication technologies and development (ICT4D) in India. The paper compares the roles of, and relationships between, the state and small scale entrepreneurs in ICT4D efforts in Kerala and Andhra Pradesh. Through this comparison it shows how the political economy within which PPP models operate, and in particular the state's relative emphasis on financial versus social goals, determines who benefits most from current ICT4D projects. It finds that, despite pro-poor intentions, and regardless of levels of state involvement in projects, the benefits of these projects are mainly captured by the middle classes. Micro-entrepreneurs who run ICT enabled businesses and maintain close connections with the state are also likely to benefit from PPPs through increased incomes. The paper further argues that, through these ICT4D projects, states in India are trying to reshape themselves into market friendly, efficient entities that traditionally defined the private sector. It finds that in this negotiation, the state is not 'privatized', but retains a sense of its own development agenda and remains necessary for the credibility of PPPs in civil society.

Index Terms—Public private partnerships, Information Technologies, development, India

I. Introduction

"Ultimately market mechanisms are critical. Government policy and support are also critical. We need public private partnerships which create an innovative combination of structured environment in which both government and private sector can work together to deliver on people's aspirations." Joint Secretary IT Department, Government of India (Interview 2006)

"I firmly believe that the state must not end up doing things which the private sector can come and do. But having said that, I think [that] in India a very dangerous model is evolving or rather a not so healthy trend where so called private enterprise is emerging under the name of various things…like private partnerships. This is encroaching into the legitimate domain of the state. Because all said and done the state has [a] certain accountability."- Former IT secretary, Kerala, India (Interview 2006)

Public private partnerships (PPPs) have emerged as a key strategy for international development agendas in the last decade. PPPs are usually implemented in the name of infrastructure improvement, more effective service delivery, and fiscal efficiency [1-3], the rationale being that private providers could "provide higher quality goods and services at lower cost, and the government sector of public providers would shrink accordingly"[4]. The collaboration between the private and public sectors is widely considered a 'win-win' situation with a synergy that overcomes each one's shortcomings [1]. These partnerships are increasingly advocated for health care services [5] the provision of water and sanitation[6, 7], and infrastructure [8] in developing countries.

PPPs are the dominant implementation strategy for projects that apply information and communication technologies (ICTs), such as computers and mobile phones, to solve rural development problems [9]. The discourse of PPPs goes hand in hand with the principles underlying many ICT for development (ICT4D) projects, whose goals are to promote efficiencies in public service delivery, strengthen the private sector and serve the poor. A popular example of PPPs on the ground is the entrepreneur run computer kiosk or telecenter that provides e-governance and education services, particularly for rural populations who do not have easy access to computers [9].

Despite the widespread acceptance of PPPs in the developing world and the substantial funding injected into ICT4D projects, actual partnership practices and the political and social impacts of the PPP-ICT4D pairing are yet to be understood. The impacts of PPPs with regard to access to public services and equity for vulnerable populations are mixed thus far [3]. Critics also caution that PPPs may lead to the privatization of public interests [10], or even that 'PPP' is just a benign way to say 'privatization' [3, 4]. The assumption

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behind these critiques is that the private sector is the more powerful partner and that the state acts as little more than the guarantor of private interests. In many cases, governments do partner with large and influential corporations to deliver public services or large-scale economic development projects [1, 11]. But we ask, what are the effects of these projects when the private sector actors are small-scale entrepreneurs? How may the developmental state[1] [12] position itself with respect to civil society under the PPP paradigm? What are the distributional outcomes of these projects for households and entrepreneurs?

The central objective of our paper is to critically examine the PPP model, through the example of ICT4D kiosks in Kerala and Andhra Pradesh (AP), with a focus on how it reshapes the state and impacts the welfare of entrepreneurs and rural households. We chose Kerala (a traditionally interventionist state) and AP (a less-interventionist but still developmental state) because they have quite distinct political economies, particularly with respect to relationships between state and civil society. Yet both have implemented their kiosk projects with entrepreneur centered models to promote the use of ICTs and to provide citizens with better government and education services. Their specific histories, however, determine the relative emphasis each state places on the private sector in its kiosk strategies and to social versus financial concerns. This makes them excellent cases with which to highlight variations and similarities in PPP structures and to correlate these with the outcomes of ICT4D projects.

Our study shows that key variations in how different Indian states structure PPPs, and the client base their PPP projects target, are determined by each state's political economy and how it conceptualizes 'development.' This paper thus contributes to the literatures on PPPs and ICT4D by analyzing how developmental states evolve to accommodate the private sector through PPPs, and by unpacking the interconnected practices of the state, private sector and civil society within public-private partnerships.

II. .ICT4D Internationally and In India

From the early days of ICT4D, the engagement of the private sector was sought for effective and efficient implementation[2]. A wide range of actors shared the belief that these technologies could help address some of the seemingly intractable problems facing the developing world[3]. Computer kiosks or telecenters[4] are popular ICT4D projects internationally and typically offer public connectivity with a range of communication services, many of which are subsidized or free to the public [13, 14][5]. Kiosk projects vary with respect to business models, services offered, and populations targeted. They share, however, an overall agreement about the importance of bringing low cost computing technologies and the Internet to poor and rural households, as well as to governments or social institutions [9, 15, 16]. Thus kiosks differ from cybercafés because they have an explicit development agenda in addition to a business orientation.

A general disillusionment with state-led development over the last two decades and the desire to take advantage of the private sector's "business acumen" [9] have led governments to embrace PPPs for their kiosk projects. In the words of a UN report on kiosks,

> "Through public-private partnerships, governments are playing a critical role in overcoming financial and capacity hurdles restricting the establishment of village computing. To be certain, these partnerships have been central to the success of many village computing initiatives tapping the power of government's ability, willingness and, indeed, obligation to serve their constituents… "[9].

Nevertheless, financial and social sustainability [17-19]; accessibility [20, 21]; community participation [22]; and relevance to the local content [23] all remain challenges in the implementation of kiosks for development. [6]

The arguments for delivering ICT4D services through PPPs are wide-ranging, and include not only capitalizing on market efficiency, but also equitably serving the poor and facilitating "good governance." As a result, both neoliberals and the left have converged on the idea. Private sector firms, multilateral organizations, and even some state actors claim that these models are becoming the norm for ICT4D projects in response to stretched development budgets, the public sector's inefficiency as the sole provider of development services[1], and the perceived loss of state power [24, 25]. The left, mainly NGOs and some government organizations, also accept this strategy as a good way to improve the lot of the 'common man' as well as governance. Both sets of reasons are broadly supported by recent, and influential, advocates of solving the

[1] Evans (1995) examines state structures, relations between states and society and how states contribute to development. He calls the developmental state a state that maintains autonomy but is not insulated from society. It is embedded in a set of social ties that bind the state to society and provides institutional channels for negotiation of goals and practices.

[2] In 2000, the G8 Okinawa Summit established the Digital Opportunity Initiative as a PPP among Accenture, the Markle Foundation and UNDP. The partnership aimed to "identify the roles that ICTs can play in fostering sustainable economic development and enhancing social equity (DOI). " In 2001, the United Nations established the ICT Task Force to provide leadership in formulating strategies for ICTs and specifically using those technologies for development. In 2005, a Global Alliance for ICT and Development (GAID) was established to address the Millennium Development Goals.

[3] This involved multiples actors involved in the GAID (http://www.un-gaid.org/).

[4] Also referred to as Information Kiosks, Community technology learning centers and a number of other names.

[5] The concept of communities sharing computer technology emerged in the 1980's with the telecottage industry in Scandinavia. The goal was to address digital divide concerns for remote rural areas (Colle and Roman, 2002)

[6] Partly in response to ongoing challenges of implementing ICT4D projects, "multi-stakeholder partnerships" (MSP) have recently been advocated over PPPs. These partnerships, comprising businesses, civil society, governments and others are supposed to go beyond simple PPPs and include a broad range of stakeholders in the risks and benefits of ICT4D projects (http://www.globalknowledge.org/gkps_portal/index.cfm?menuid=178&parentid=179). Successful examples of MSP-type approaches have been reported for ICT4D efforts in e.g. Vietnam and Sri Lanka (Hosman & Fife, forthcoming) but PPPs are by far the more dominant development-delivery mode in practice.

problems of the poor through pursuing primarily capitalist strategies [26, 27]. All of these rationales have been sympathetically received, to a greater or less degree, within the flourishing Information Technology (IT) sector and in government circles in India.

India has been a leader in ICT4D projects internationally, starting earlier than other countries and implementing projects beginning in the late 1990's. We found that three factors led to the pursuit of ICT4D projects through PPP strategies in India: the meteoric rise of India's IT industry; the accommodative nature of the state; and the ideologies of the post-liberalization period during which these projects developed.

First, India's much acclaimed success in the IT industry prompted the state to try to distribute the benefits of ICT more broadly through ICT4D. In the mid-80's, the Indian government developed a national policy to create a supportive environment in which to launch its software industry. Quickly IT became one of India's fastest growing industrial segments[7] [28], but few individuals within the country had access to these technologies[8]. Our interviews with state representatives indicated that the government became concerned that while the software engineers and IT professionals gained exceptional levels of wealth, the benefits of the IT sector were not being distributed evenly, and the 'digital divide' was growing. As a result the state focused on strategies for bringing ICTs to rural areas and extending connectivity across the country. This equity-inspired move was bolstered by the belief that with more people educated in IT skills, the industry itself could better flourish. A senior official in the Department of Information Technology for the central government noted,

> "There was a realization that the economic prosperity which has come to India with IT… is not doing as much in the rest of the country...Today you have a lot of IT enabled services in India- it's a global competition. India needs to have more strategic depth for maintaining its competitiveness. That depth can come only when you push the development down to the rural areas. Therefore development oriented PPPs and e-governance leveraged kiosks could service multiple purposes" (Interview, 2006).

The accommodative nature of the Indian state is a closely related factor that contributed to the push for ICT4D and the role that civil society organizations play in its projects. The Indian state has been categorized as a "fragmented multi-class state"[30]. It commands authority, but tends to be disunited, engages in accommodative politics with multiple interests, and is not in a position to define its goals narrowly [30, 31]. The leaders of fragmented multi-constituency states such as India, the argument goes, are always concerned with civil society and broad-based political support [30]. The relationship between the Indian state and the private sector has been, and is, complex, sometimes cooperative and other times conflicted, with tensions between social changes and economic growth. With highly publicized economic benefits from the IT industry to elite sections of the population, the state 'needed' to accommodate its other (and larger) constituencies. Based on our interviews with IT leaders and government officials in India, we found that through ICT4D projects the state made visible its attempts to accommodate the rural electorate. State actors also indicated that by including these groups in the benefits of IT and education, any resistance among the rural population towards the IT industry could be pre-empted. In the words of a senior official in the Ministry of Information Technology:

> "Yes- there was a feeling that maybe it would be wrong to exclude people from the IT industry. After Chandrababu Naidu was voted out of office[9]- IT lost momentum it hasn't regained. Earlier everyone had unrestrained enthusiasm for IT. Now it is much more nuanced [and] people are much more careful…because, see, one of the reasons why e-governance [in urban areas] was promoted was because they thought it was a way to pull votes in…When he [Naidu] lost they realized that it could politically costly to be seen to be elitist and focusing on a technology that mainly benefits the rich in cities. Government people became more cautious" (Interview, 2006).

Third, PPPs for ICT4D gained support in India in the 1990s, during an international political environment supporting economic liberalization and less state intervention. During this post-liberalization period, the Indian political economy underwent an ideological shift from the 'state to the market' with a dismantling of state controls and greater encouragement for private enterprise [32]. This shift gradually became entrenched in India's development agenda for infrastructure, service delivery and assistance to the poor. Thus there was greater acceptance of the private sector in development-related activities through PPPs – and all the more so with ICT4D projects because the spectacular success of the entire IT sector was partly attributed to the loosening of government restrictions on the economy.

The Indian Central government's enthusiastic support for ICT4D in general and for telecenters in particular has led it to initiate 100,000 Common Service Centers (CSCs). These CSC kiosks are internet enabled ICT access points, to be installed throughout the country, and aimed at rural populations. These access centers are supposed to provide high quality video, voice and data content to target education, e-government, health and entertainment, as well as to provide commercial services. The kiosk initiative is being implemented under a PPP model with collaboration among

[7] The Indian software industry grew from US$150 million in 1991-1992 to US$23.6 billion in 2005-2006.

[8] Only 6 out of 1,000 people had telephone access in 1990 and even fewer had access to computers or the Internet [29] WorldBank, "Data and Statistics," in *Key Country Data: India*, 2006..

[9] One example and justification for this accommodative behavior in the case of ICT4D is the 2004 election in AP. During this election, AP's Chief Minister Chandrababu Naidu, who had been a prominent and successful figure in supporting the growth of the IT industry in the state, lost his bid for reelection. A popular criticism in the press about Naidu's term was that he did not 'extend the benefits of the IT industry' to the rural areas who were the majority of constituents in his state. The subsequent Congress government made ICT4D a prominent part of its overall IT strategy.

village entrepreneurs, service center agencies and state governments[10] [33].

In sum, a variety of factors led to the current popularity of ICT4D kiosk projects in India. The state felt pressure to become more efficient in its delivery of services and lower its costs, but at the same time not to abandon broad based development goals for the 'masses'. We now examine how this plays out in practice by turning to our two study areas: Kerala and AP.

III. ICT4D AND PPPS IN PRACTICE

Kerala is well known among scholars for being a 'model of development' with high levels of social development that are unparalleled in developing countries [34-36]. The state has a reputation for being responsive to populist demands and the Left Democratic Front led by the Communist Party of India (Marxist) has a strong political presence. The state has been criticized, however, for its low economic growth with poor industrial development and persistent unemployment[11] [36-38]. Although historically viewed as a government suspicious of private sector investment, in recent years the state has tried to overcome this image through policy measures to 'modernize the government[12] and to encourage private investment [38]. The government has tried especially hard to promote its IT industry, with software exports growing by 27% from 2004 to 2005 under the Software Technology Parks Scheme (www.stpp.soft.net/).

The Kerala state government's kiosk projects are based on a PPP model with active state participation that is responsive to the needs of entrepreneurs. The overarching purpose was to emphasize "ICTs in all walks of life and to improve living standards (www.akshaya.net)." The government initiated the Akshaya project in 2002 to establish over 5000 networked multi-purpose community technology centers, thus eventually providing education and governance services through ICT access to the entire population. It also aimed to "make least one person in each of 650,000 families in the state e-literate" through an e-literacy or basic computer training course subsidized by the government (www.akshaya.net).

We conducted our research in the Malappuram District where the Akshaya project was piloted. Here the state established 630 internet-enabled computer centers, each meant to serve 1000 households, and each run by individual entrepreneurs selected and trained by the state. These entrepreneurs were mainly rural individuals from lower middle class socio-economic backgrounds. The role of the state was to establish the connectivity; select, train, and facilitate loans for the entrepreneurs; and subsidize the e-literacy training. The entrepreneur's role was to establish the kiosk, purchase the equipment, provide government services to the public, and operate a financially sustainable business. The state maintains a close relationship with the kiosk entrepreneurs and tries to be highly responsive to their needs and requests.

AP is different from Kerala because of its historically lower social indicators, much earlier embrace of the private sector, and leadership in the process of economic liberalization[13] (Table 1 and Table 2). Naidu's regime as Chief Minister of the state (1995-2004) was noted for actively pushing the state towards 'modernization' through liberalization policies [39]. Under Naidu, AP became the first state in India to embark on a restructuring program in accordance with the guidelines of the World Bank and IMF [40]. With the reform program came a decrease in subsidies, a marked decline in public investment, and increased investment for infrastructure in the IT industry[14][41]. Naidu tried to lift AP from an economically average state to a high earning one, but the growth performance from the last two decades has been mixed [42]. The AP government is recognized for the success of its IT industry, with software exports growing by 65% from 2004 to 2005 under the Software Technology Parks Scheme (www.stpp.soft.net/).

TABLE 1: COMPARISON OF GSDP GROWTH RATES

State	Growth Rate in Gross State Domestic Product %		Growth Rate in per capita GSDP (%)		Rank for growth Rate in GSDP		Rank for growth rate in per capita GSDP	
	1980-81 to 1990-91	1993-94 to 2000-01	1980-81 to 1990-91	1993-94 to 2000-01	1980-81 to 1990-91	1993-94 to 2000-01	1980-81 to 1990-91	1993-94 to 2000-01
Andhra Pradesh	5.50	5.31	3.33	4.04	4	8	5	8
Kerala	3.51	5.17	2.13	4.05	14	10	13	7
All India	5.37	6.13	3.24	4.38	-	-	-	-

TABLE 2: INDEX OF SOCIAL AND ECONOMIC INFRASTRUCTURE

State	Index		Rank among Indian states	
	1995	2000	1995	2000
Andhra Pradesh	99.19	103.3	10	9
Kerala	205.41	178.7	2	2
All India	100	100		

AP is well known as a pioneer in India for facilitating PPPs with its ICT4D initiatives, particularly in the field of e-governance. In 1999, the state established 265 privately run

[10] The PPP is accompanied by a discourse of minimal government intervention when in fact the government often plays a large role in organizing and executing these kiosks. Individual state initiatives such as the kiosks in Kerala and AP will be loosely incorporated into this national scheme, but will retain autonomy in the details of implementation.

[11] The state ranks tenth (out of 15) in the ranking of state wise sectoral growth rates of gross state domestic product (Rao and Dev 2003). The annual GDP growth rate between 1994-95 and 2001-02 in Kerala has averaged 5%, compared with the all-India annual GDP growth rate of 6% during the same period. The average annual growth rate in per capita GDP in Kerala between 1994-95 and 2001-02 was 3.89% compared to the all-India average of 4.26% (Subramanian, 2006).

[12] These reforms were supported by the Asian Development Bank

[13] AP ranks 10th out of 15 states in terms of human development indicators (HDI) for India (UNDP, 2001)

[14] This was the first time the World Bank took a specific interest directly in any region or state in India as opposed to approaching the central government. The selection of AP as the first place for state-specific economic restructurings in India signifies the early acceptance of the private sector by the state government (Reddy, 2002).

centers, called e-seva, in the capital city, Hyderabad. These centers were places where citizens could electronically access a range of government services. The state has since extended these services to rural citizens through three separate kiosk projects called Rural Eseva, Rural Service Delivery Points (RSDPs), and Rajiv Internet Village Centers. These three different models are supposed to 'compete' with each other in order to produce the most efficient mechanism of service delivery to citizens.

Rural Eseva, RSDPs, and Rajiv Internet Village centers were intended to replace traditional forms of governance, which were thought to be inefficient and onerous, with a more modern, transparent and responsive system [43]. They are supposed to deliver government to citizen services (G2C) and citizen to citizen services (C2C) such as online filing of complaints, online application registration for various government programs, issuance of certificates, and access to Government information. Most similar to the Akshaya model in its structure, the Rural Eseva project was implemented by the local district government in collaboration with kiosk entrepreneurs and without intermediaries[15]. As with the Akshaya entrepreneurs in Kerala, these entrepreneurs consist largely of rural individuals from lower middle class socio-economic backgrounds. Second, the RSDPs were implemented by AP Online, an intermediary company jointly formed by the government of AP and Tata Consulting Services (TCS)[16]. The company liaises with the government and manages the individual entrepreneurs who own and operate their kiosks[17]. The third ICT4D initiative is the Rajiv Internet Village Project, in which the Government of AP has two partners: 1) Bharat Electronics in partnership with Reliant Information, a private company and 2) Times, a state level NGO formed to set up 8615 Rajiv centers across the state. The business model is structured so that private sector organizations act as intermediaries between the entrepreneurs and the state. These organizations manage the entrepreneurs, provide the entrepreneurs with a variety of business services, make connections with the government and other businesses, and actually pay the AP government 6000 Rs/year for having access to e-government services[18]. Therefore, although the three projects have similar overall goals of efficient and transparent delivery of government services, the models by which these are implemented and operated vary considerably (See Figure 1).

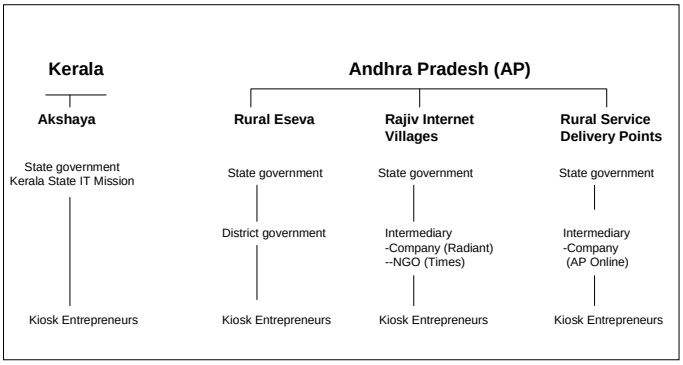

Figure 1: PPP Kiosk Models in Kerala and AP

IV. Research Methods

Our research is based on a combination of field methods such as interviews, participant observation, and short surveys, as well as secondary literature review and document content analysis. Primary data collection took place on several trips to India over a period of 3 years from 2004 to 2006. Our multiple methods approach was a means to triangulate the information from diverse sources so that we could robustly interpret our findings.

We conducted 31 interviews with state actors at the central government level and within AP and Kerala using a semi structured interview protocol. Using snowball sampling methods we selected senior state officials who conceptualized and planned kiosk projects in each state as well as in the central government. We also interviewed officials who oversaw the implementation of the projects on the ground. These interviews explored each state's ICT4D strategy, and the ways in which states were negotiating their relations with civil society through participation in PPPs. Interviews took place in government offices and lasted approximately one hour. Several senior officials and project implementers were

[15] The rural Eseva project aims to provide government information and services to citizens in rural areas. It aims to deliver G2C and C2C services in rural areas. The centers' most popular services include the provision of income or caste certificates, payment of electricity bills, and online applications. The project began under the leadership of the District Collector who acted as a champion in facilitating services, addressing problems and garnering citizen support. Originally the project was envisioned to have self help groups and unemployed youth run the centers as part of an employment and empowerment scheme. The National Informatics Center provides training to the entrepreneurs and there is much interaction between the centers and the government in the implementation. The entrepreneurs purchase their own equipment, provide services, and run the centers. The government facilitates the loans, provides the entrepreneurs with government buildings as centers, provided training and general support.

[16] The government owns 11% of the company and Tata Consulting services own 89%.

[17] These kiosks are owned by individual entrepreneurs who converted their telephone booths into places where citizens can pay bills and access e-governance services. There used to be 800,000 telephone operators in the villages of the state. When the telephone tariff and revenues of these entrepreneurs decreased, they approached the government to intervene on their behalf through an employment scheme. The government decided to use these operators as service delivery channels and provided them with subsidies to begin computer kiosks. When the RSDP kiosk initiative began, 2500 RSDPs were initiated. At present, 1100 operators remain and conduct transactions. 926 RSDP kiosks are in a 'working state' (GoAP, interview).

[18] The project aims to bring the "government closer to the people by providing electronic based delivery within the reach of citizens living in rural areas.([44] GoAP, "Rajiv Internet Village Brochure," 2004.)" The kiosks provide G2C services, including electricity bill payment, results of education exams, processes to lodge complaints with the government as well as business to citizen services (B2C), such as payment of cell phone bills, matrimonial services, and computer literacy. The private sector partner only begins paying the annual fee to the government after they have reached 80% coverage of their initial costs. There is no subsidy for the entrepreneurs in the start up process. Each entrepreneur must pay the company an initial investment for the provision of services, a PC, printer, and UPS and government receipts for electricity bills. The entrepreneur's role is to provide services and maintain their center and equipment.

interviewed repeatedly over a three-year time period in order to understand how the projects were changing.

Through published reports and discussions with experts, we identified the most prominent IT companies in each state and in India. From this list, we interviewed 21 IT company officials as well as leading figures in the IT industry at a national level and within the two states. These semi-structured interviews focused on the connections between the IT industry, overall economic growth, and ICT4D projects specifically.

We conducted short one-on-one structured surveys with 100 entrepreneurs with the ICT4D kiosk projects in each state. The entrepreneur surveys gathered information on revenues, costs of kiosk operation, numbers of customers, and background characteristics of the entrepreneurs themselves. The surveys took place in kiosk offices or in the homes of entrepreneurs with no other individuals present. Our sample of entrepreneurs was nonrandom, comprising those who were available during the survey period, willing to speak, and whose kiosks were functional. We conducted open ended, in-depth interviews with 16 additional local entrepreneurs in Kerala and AP from the different projects. Several entrepreneurs were interviewed multiple times. Overall, we spent many hours with entrepreneurs in their kiosks, villages, homes and with their families. In the kiosks of each of the four projects, we observed entrepreneurial behavior, usage of kiosks, and engaged in informal conversations with users of kiosks. Through these interviews and shorter conversations with entrepreneurs, we explored the role of entrepreneurs in PPPs and the position of the entrepreneur with respect to the state.

Household surveys (n=127) were conducted to collect summary statistics on kiosk user characteristics and patterns of use. The project offices in each state recommended a list of centers in different rural and urban geographies in the districts. Households were selected randomly from the kiosk service areas in each of these locations. In addition, we interviewed randomly selected kiosk user and non-user households in each district with an open-ended interview protocol to understand the distributional impacts of the projects, if any.

Finally, we analyzed the literature and policy documents on PPPs, ICT4D, and development and the modern Indian state. These various sources provided a diverse range of evidence for our analysis of the PPP-ICT4D combination in the two study states

V. Kiosks and The State in Kerala and AP

A. Factors Shaping PPPs

In our research in Kerala and AP, three factors stood out as shaping how PPPs are constituted and how they influence the outcomes of ICT4D projects: (1) state strategies for ICT4D promotion, particularly the differences in the expected roles of private and public actors; (2) relative emphasis on the social development versus financial goals of the project; and (3) relative power of the state versus the private sector in the PPP. As we showed, the PPP relationships in these projects are highly varied in structure. We argue that this variation reflects the specific histories of state, market and civil society relations within the states in which the PPPs are implemented. We also find that these factors influence the impacts of ICTs on the populations targeted as kiosk beneficiaries.

First, each state's overall ICT4D strategy results in significant differences in the operational roles of the private and public sectors in these partnerships. Although Kerala and AP both follow an entrepreneur-centered approach to ICT4D kiosks, the state in Kerala builds in a large role for itself in the implementation process. The state works with entrepreneurs to develop their kiosk services, providing content and connectivity, and overseeing the training of these individuals. The strong and continuing state presence reflects Kerala's state-led development history and its involvement in rural programs. The state's acceptance of a PPP model in the first place was a response to long-standing critiques of prioritizing social development over economic growth, and to the growing national acceptance of private sector led development initiatives [19].

In the case of AP, the state has a more minimal role and much greater responsibility is given to private entities, be they entrepreneurs or intermediary companies. The state government outsources the project management and logistics to a private company or mediating agency (except for Rural Eseva where the local District government manages the project). AP promotes a market environment in which the three projects must compete for customers. In the words of a senior state IT official,

> "The AP government policy is to have competing channels of service delivery- not just have a monopoly with one kiosk model. We don't want all of our eggs in one basket. We want the same service available to citizens through different mechanisms. That way the channels must compete to be efficient and provide high quality services…" (Interview, 2006).

In AP, many entrepreneurs have minimal interaction with the government because in two out of the three projects there are intermediaries between them and the government. The government simply has to make its services available to these mediators so that the kiosks can provide customer facilities such as utility bill payment. Rural Eseva is the exception to the AP kiosk model even though it too must compete against the other projects. But entrepreneurs in Rural Eseva do receive government support, albeit at the local rather than the state level, in the form of implementation, training, and project management.

Second, the extent to which each state emphasizes social goals such as education and poverty alleviation influences both the constitution of PPPs for ICT4D as well as the target user. In Kerala, the state sees the kiosks as development

[19] When the e-governance program, Friends, which provides government services via private sector partners, was first established in Kerala in the late 1990's, there was great public outcry that the government was 'privatizing' its services. For the Akshaya project, which also allows private individuals to deliver government services, there was less opposition. The explicit social goals within the entrepreneurial model were key to the widespread acceptance of the program.

interventions and remains committed to its tradition of promoting social welfare. A former IT Secretary stated,

> "This is absolutely a development project. We take it as development or empowerment of the ordinary man. We're not really looking at it as a business model for the entrepreneurs. The government mission is to view this as a clear development model. I also believe that if a member of a family becomes e-literate, the demand for the services will increase" (Interview, 2006).

The state mandates that the overall objective of the kiosk project address social goals for the poor and financial goals for the entrepreneurs. It targets the poor by subsidizing an e-literacy training phase to make computer education accessible to all. It assists entrepreneurs to repay their loans for kiosks by paying them a subsidy for each household who attends the e-literacy training.

The AP government sees the kiosk projects primarily as improvements in service efficiency, and does not make a concerted effort to target the poor or to emphasize social goals. The state does not subsidize the projects or attempt to ensure the financial sustainability of entrepreneurs. The government treats entrepreneur-run kiosks as effective ways in which to deliver services to rural citizens and expects market forces to encourage citizens to choose whichever kiosks provide the best service. But state representatives do acknowledge that this strategy presupposes that only particular classes will benefit from these services. As a senior official in the AP IT Secretariat said,

> "In development, you are always looking at the downtrodden. That is not necessarily the case for this project. It will be the emerging middle class, upwardly mobile who are in need of these kiosk services. The people who have got the patience to go to a school. To read and write…the fellow who does not have electricity won't come to the kiosk to pay for electricity bill.,,,We don't try to include everyone" (Interview, 2006).

The relative power of the partners in the PPP is the third factor influencing the constitution of PPPs and the target user group. The literature on these partnerships shows that PPPs are often imprecisely defined (who is the private, who is the public), and that it is unclear what each partner does [1]. Although it has been claimed that PPPs protect and cover for the dominance of private interests [1, 4], in both Kerala and AP significant power remains with the state. The private sector in kiosk projects mainly consists of small entrepreneurs without much voice or coordination. In the AP case, the private partners include the mediating companies that coordinate and manage the small scale entrepreneurs. But even they are dependent on the state for provision of backend government services, and permission to utilize government databases. The private sector is, in effect, participating on the terrain of the state, and so these PPPs cannot be characterized as privatization or the domination of state goals by private interests.

When entrepreneurs are the weaker partners, and particularly when there is a mediator between them and the government, there are few mechanisms by which they can express their concerns to the state. This is especially so for AP's RSDPs and Rajiv Internet villages, where entrepreneurs must always go through the intermediaries to make requests for new or changed services. Many think that they cannot make major decisions about the services they offer, but need to wait for the intermediaries to determine their business strategies. These entrepreneurs perceive the government as a remote institution with which they do not know how to interact:

> "I can't do this without Times (the intermediary company) and they are a mediator between the government and me. I can't do it on my own. I need Times to deal with the government with their rules, with getting permission from the government to use their services. We need to eventually pay the government for their services. We are focused and can't deal with the government directly…" (Interview, 2006).

In the cases of Akshaya and Rural Eseva, the entrepreneurs are still the weaker partners in the relationship, but they have mechanisms in place to interact directly with the government. They can express their concerns to the state and can also expect a direct response. Although they are mandated by the state to provide certain socially-oriented services, they generally believe that they have the flexibility to create their own business strategies.

These differences of strategy and structure show how state histories and political economies structures shape PPPs in practice. The efficiency-oriented strategy for AP's kiosks can be understood as a part of its recent history of market oriented economic development and its drive for greater privatization. Kerala's strategy with strong state involvement and explicit safeguards for entrepreneurs and citizens reflect its interventionist history of state led development. With a history of resistance to private sector initiatives in Kerala [38], the government uses an accommodative strategy to garner buy-in among civil society for their entrepreneur-centered kiosk project. Additionally, how each state views its kiosk projects – as tools of development or as tools of efficiency -- makes for differences in the roles assigned to the state and private sector, and extent to which the state tries to control the terms of the partnership.

B. State Renegotiating its Role in Public Service Delivery

In both Kerala and AP the state governments are trying to reshape themselves into market friendly efficient entities that traditionally characterize the private sector. States are under pressure from the central government to make their government services more readily available to the public through decentralization [45], computerization and e-governance [46]. At the same time states are often in fiscal trouble with limited budgets and inadequate capacity to deliver government services. So they are turning to the private sector as partners in the modernization process.[20] As a government official from Kerala said,

[20] Kerala and AP have also faced tacit encouragement to promote 'good governance' from multilateral organizations such as the Asian Development Bank and Department for International Development. (Asian Development Bank, 2002 http://www.adb.org/Documents/Periodicals/inrm/INRM_200212.pdf ; Center for Good Governance, 2003 http://www.cgg.gov.in/home_inside_about.html)

> "In e-governance you find a much higher acceptance of the private sector as a player. The government acknowledges that they don't have the technical or financial capacity in the government and they need to look to the private sector" (Interview, 2005).

States are also eager to improve their image with the public through their entrepreneur-centered kiosks. Projects providing government services via kiosks have developed partly in reaction to citizens' perceptions of state-provided services as poor quality, slow, and inefficient. Our interviews with households also revealed that ordinary citizens resented the bureaucratic and rude manner in which government officials treated them. Thus kiosks represent a new way of government service delivery that is fast, efficient and hassle free, allowing states to renegotiate their standing with their citizens. An employee from the AP Office of Information and Communication Technologies explained that:

> "What we are aiming at is transparency, speed, and facilities for the citizen. It [the kiosk] is an integrated citizen service center. That is the main thing we are looking at- providing citizens with convenience and comfort in transactions…[We aim] to make the government appear more citizen-friendly, or common-man friendly " (Interview, 2006).

Civil society in India may be disillusioned with government provided services, but it is equally skeptical of the private sector as the protector of the poor. The resistance to private sector participation among some segments of civil society is rooted in the belief that this sector is solely concerned with profit making and is corrupt in the provision of services, which are themselves only loosely linked to development goals [47]. Thus despite a reputation for poor services among citizens, the government brand, paradoxically, is considered accountable and necessary for the delivery of governance services[21]. For example, entrepreneurs indicated that citizens needed to feel confident that when they were paying government bills they were actually in a government office:

> "If it is seen as a government place, then the customers will be more. If the customers think it is a government place, they will have more confidence and my center will be a better one. If I say my center is just a private place, they will think I am a fraud" (Interview in AP, 2006).

We find that through these kiosk projects a new form of government is being experimented with that attempts to combine the accountability of an elected government with the efficiency and customer service associated with the private sector in the minds of citizens. This hybrid version of government is gradually reworking both the way in which citizens perceive the government and also the state's vision of itself in relation to its citizens. Therefore despite partnering with the private sector in these kiosk projects, the government wants its name to be associated with each kiosk. They hope that people will come to think of the state as fast, accommodative of the needs of citizens, and efficient in service provision. We found that these partnerships are becoming political symbols of a new energized form of government in public service delivery. A state employee in Kerala, discussing a typical kiosk, said

> "They [citizens] think it's government, but it's the ambience of private - the ambience has been changed - it looks more welcoming. People used to think -- the normal citizens-- can we step into this place? When all the initial things [Akshaya kiosks] started - people thought it was a very high place that they couldn't go into. There was a fear when they saw it. But today you find the comfort is so much that people don't talk [about] anything else" (Interview, 2006).

Entrepreneurs emphasized their capability to deliver government services through the PPP strategy. They claimed they could make their kiosks financially viable by providing a better experience for citizens. With longer and more flexible office hours, more courteous treatment for all types of customers and more efficiency than the state, entrepreneurs indicated that it was to their advantage to provide good quality services. Households also saw benefits to this hybrid form of government. Several households indicated that the private sector treats all customers with a level of respect that they were not receiving from the government. In this sense, it seems that the government is paying the private sector to provide a higher level of customer service to its citizens. State representatives argued that this new mode of service delivery enabled them to leave behind a legacy of poor quality service provision without having to actually deliver services themselves.

C. Kiosks and Distributional Outcomes

While we recognize that it may be too soon for a comprehensive impact analysis of the PPP model for kiosks, we sought to examine who is benefiting from the projects and to what extent. Although ICT4D advocates claim that ICT kiosks can deliver governance and educational services to the poor [48], our research finds that – at least for now – the benefits are mainly captured by the rural middle classes. Figure 2 indicates that most users of kiosks in Kerala and AP are from high income or middle income households, with incomes well over the average Indian per capita income for the rural sector of $262/year [49][22].

Following Kashyap and Raut (2007), the majority of kiosk users can be characterized as middle or high income not just by their wealth but also by their behavior and lifestyles (see Table 3). Although compared to industrialized country standards, or even the urban Indian middle class, these households may not be considered wealthy, they are substantially wealthier than much of the rural population. Even in the case of Akshaya, despite state efforts to target the

[21] The government brand is not always beneficial for the profitability of kiosks where the more business oriented services, such as computer education courses, are concerned

[22] This figure is based on data from India's National Sample Survey Organisation from 2000-2001 and adjusted using the all-India average metropolitan Consumer Price Index for 2006. (Monthwise Consumer Price Index of Metro Cities, http://des.delhigovt.nic.in/PCU/metromonth.htm)

poor through e-literacy training, our research shows that these individuals are usually not willing (or able) to pay for kiosk services on a continuing basis. This is not to undervalue the achievement of serving the emerging middle classes, or of creating awareness of ICTs or e-literacy among a large group of people. But our findings do challenge the common premise that poor rural populations are significant users and beneficiaries of ICT4D kiosk services. It is this premise that has spurred national and international interest and investment in ICT4D [18].

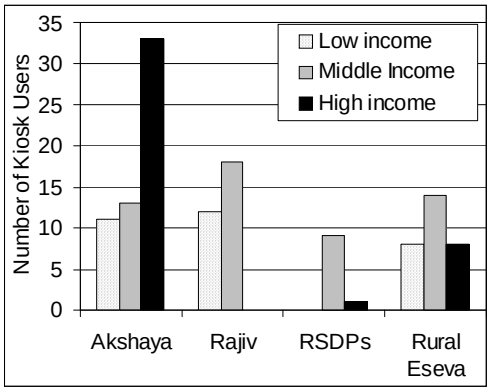

Figure 2: Income background of users of kiosks by ICT4D project. Source: Survey data of 127 households in Kerala and Andhra Pradesh over six months in 2006.

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TABLE 3: SOCIOECONOMIC CLASSIFICATION OF RURAL MARKET

Socioeconomic classification	Characteristics
R1	Landlords, farmers, educated, exposed to urban environments, children in colleges, aspiring to match urban lifestyle; spend on social occasions; own durables like 2 wheeler, TV, music system, LPG, refrigerator, mixer grinders
R2	May not be educated, farmers with 5 acres of land; want children educated; owns durables like 2 wheeler, TV, LPG; children attend private English medium schools
R3	Average land holding 2-5 acres; manages small savings; children goes to village school; owns durables like TV
R4	Has little or no land; agricultural labor; living below poverty line;

Source: Kashyap and Raut, 2007

Evidence from the two states indicates that, although not always targeted as beneficiaries, entrepreneurs could gain (or lose) substantially in financial terms from ICT4D kiosk projects. Figure 3 shows the median profit/loss as well as the large variation in these for entrepreneurs of the four kiosk projects. Since the entrepreneur survey sample was non random, we present only summary statistics to illustrate our findings. The literature on kiosk revenues has shown that Indian kiosk operators may not provide robust self-reports as to their profits or losses [50]. Our surveys, however, were supplemented by many hours of observation and informal discussions with several of the surveyed entrepreneurs, thus reducing the probability of intentional "errors". Moreover, the range presented in Figure 3 was also reflected among the responses of the 16 additional entrepreneurs with whom we conducted in-depth interviews, allowing us to have confidence in the survey findings. Eseva and Akshaya are the two projects in which the median profit for entrepreneurs is positive at $134/ month and $5/month respectively. In the case of the other two AP projects -- RSDPs and Rajiv Internet Villages -- the median net revenue per month is a loss of income ($22 and $36 respectively). Figure 4 shows that in Rural Eseva 95% of entrepreneurs earn a profit, while 54% of entrepreneurs earn a monthly profit in Akshaya. In both RSDPs and Rajiv Internet Village fewer than 50% earn a monthly profit.

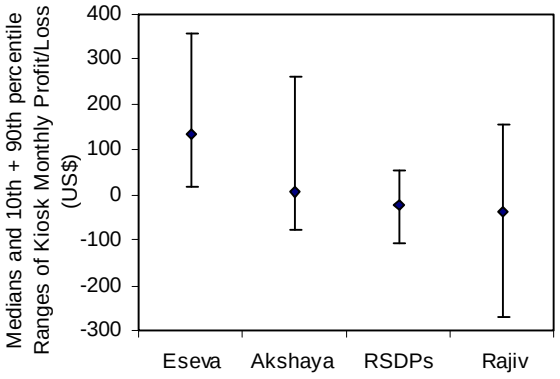

Figure 3: Median and 10th and 90th percentile ranges of entrepreneur kiosk monthly profit and loss. (Figures converted from Indian Rs to USD at conversion of $1=44.5 Rs Jan- May 2006). Source: Survey data of 100 entrepreneurs in Kerala and Andhra Pradesh in 2006.

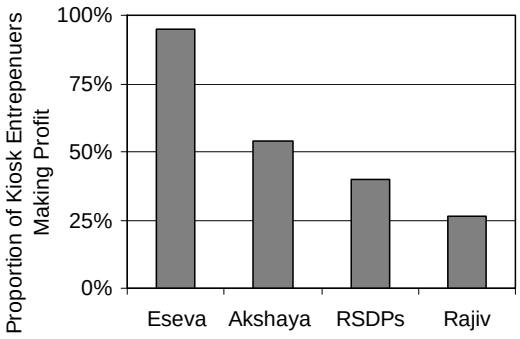

Figure 4: Proportion of kiosk entrepreneurs in each project that are making a profit. Source: Survey data of 100 entrepreneurs in Kerala and Andhra Pradesh.

In both states, it is where the state continues to monitor and empower entrepreneurs that kiosks are most profitable. The state is actively involved in the Rural Eseva and Akshaya projects, promoting, regulating and assisting entrepreneurs as opposed to 'getting out of the way.' These entrepreneurs receive more training and capacity building than do those in the other two projects, and have a direct channel to the government through which they can convey their concerns and needs. They have more power vis-à-vis the state, while still being the junior partner, than do entrepreneurs in the RSDP and Rajiv projects who must interact only through intermediaries. Despite efforts to train entrepreneurs and subsidize their initial costs through the e-literacy training,

however, the Akshaya project has only 54% of its entrepreneurs making a profit.

TABLE 4: CHARACTERISTICS OF KIOSK ENTREPRENEURS

Characteristics of entrepreneurs	% Rural Eseva entrepreneurs	% Rajiv entrepreneurs	% RSDPs entrepreneurs	% Akshaya entrepreneurs
		Levels of Education		
Up to 8th grade	5	20	-	-
Up to 12th grade	43	20	58	18
University	47	53	42	64
Certificate course	5	7	-	18
		Sex		
Males	74	87	93	86
Females	26	13	7	14
		Location of Kiosk		
Rural	68	73	93	62
Urban	21	13	-	18
Peri-urban	11	13	7	20

Source: Survey of 100 entrepreneurs in Kerala and Andhra Pradesh

This is not to claim that the structure of the PPP is the primary determinant of kiosk profits/month. Table 4 shows the location of the kiosks and the types of services they offer. It is evident that, though most of the kiosks in all the projects are rural, a larger percentage of the Rajiv and RSDP kiosks (the relatively unprofitable projects) are located in truly rural areas. Kiosks located in rural areas with populations of fewer than 5000 tend to be less financially profitable than kiosks in near-urban areas with larger populations. The services provided could also influence profitability. The Rural Eseva model, where the local government channels all bill payment traffic through the kiosks, has proven to be profitable. However, education services, which are the main offerings of Akshaya, have a wider range of profitability and loss. We would need a much larger sample to isolate the impacts of PPP structure, kiosk placement and kiosk services on net revenues. But we can say that, thus far, the financial benefits for the average entrepreneur in any of these four ICT4D projects are minimal. In many instances, participation in a kiosk project is actually detrimental for a small entrepreneur.

VI. CONCLUSION

This paper has examined the coupling of the PPP model with ICT4D efforts in light of how it enables a reshaping of the state and affects entrepreneurs and households in India. The literature on PPPs suggests that there is little substantive information on how PPPs operate in practice [4], or understanding of the specific roles of the private and public sectors in these partnerships [1]. This paper contributes to the PPP discussion by critically examining the theory and practices of these partnerships, especially with respect to the relationship of the state to entrepreneurs, through comparing the structure and performance of ICT4D kiosk projects in Kerala and AP.

The PPP literature is largely based on analyzing the role and relevance of the government when it partners with powerful private entities, such as multinational firms, who implement major infrastructure or mass public service projects [1, 11]. We examine these PPPs in a case where the private actor consists of small-scale entrepreneurs, and where substantial power remains in the hands of the state. The literature suggests that, although PPPs are implemented to compensate for the inefficiencies of the public sector in the delivery of services, the equity impacts of PPPs for vulnerable populations have varied [1-4]. Our research with the case of ICT4D shows that the distributional benefits of many kiosk projects are mainly captured by the semi-rural middle classes. The skew in favor of higher income groups may be exacerbated by the need for micro-entrepreneurs to break even. Although often the intended beneficiaries of ICT4D projects, vulnerable groups are less than ideal customers for kiosk entrepreneurs because of their lack of ability (or willingness) to pay for services on an ongoing basis.

Critics of PPPs have argued that these models 'cover' for or border on pure privatization and replace the public sector's ability to serve the public good [1, 4]. We find, however, that with ICT4D kiosks, a simple process of privatization is not occurring. Instead, the state remains involved in project implementation and retains control over its development agenda and strategy. Rosenau (1999) argues that public partners such as the state are 'providers of relevant public goods and services of last resort.' This means that citizens may hold governments more accountable than the private sector in public service delivery [3]. Our research confirms this and indicates that, in India, both the private sector and consumers want the provision of governance related services, such as e-bill payment, to be backed by the credibility of the government. The government remains a key player when the state entrusts the private sector, particularly small-scale entrepreneurs who are themselves ordinary citizens, with the responsibility of delivering public services.

Thus our research shows that there is a simultaneous trust in and disillusionment with the government as both inefficient yet credible. In a developmental state such as India, the state can use service delivery through ICT4D kiosks as a powerful political symbol of responsiveness and as a policy tool to portray a new more efficient government. Over time, this symbolic (and real) responsiveness may enable Indian states to begin shedding their image of bureaucratic lethargy, and to rework how they represent themselves to their citizens.

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