

Private Sector Provision of Internet Access in Rural India

by

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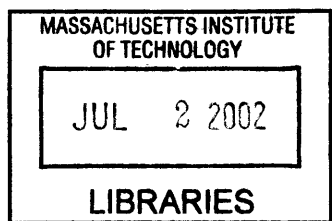
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ABSTRACT

In South India today, a number of ongoing projects seek to provide internet access to rural areas by combining computer, internet, and other telecommunications technologies in a profitable business model. Yet, in spite of growing interest in this work, few formal evaluations have been performed on specific projects and little progress has been made toward increasing discussion of the strengths and weakness of each. Though public, private, and non-profit funds have been in a number of different ways to stimulate rural projects of this sort, evaluations to date have tended to focus on efforts led by public and non-profit organizations. Little attention has been paid to the results of private sector investment.

This analysis fills a portion of the existing information gap, examining the efforts of a major sugar cane processing plant in rural South India to provide internet access to villagers. The sugar cane plant's project is evaluated on viability of infrastructure; financial sustainability; and success in meeting the company's own social objectives. In the final analysis, the company seems poised to succeed in creating a functioning, profitable network of rural internet kiosks, however, its success at providing broad access to a diverse segment of communities is limited.

Two important findings emerge from this study. First, though access to computers and the internet is still limited in absolute numbers, computer aware individuals and computer users are a demographically diverse group of individuals. An intense survey of rural households demonstrates that users of computers and the internet come from a broad range of backgrounds. Though only one-quarter of rural villagers in surveyed areas were computer aware and an even smaller seven percent actually use computers, the body of actual users was demographically diverse across variables such as gender, wealth, education, and age.

Second, the private sector, while seemingly able to construct a viable infrastructure for providing computer and internet access in rural areas, only serves a limited range of individuals. The project examined here was used by only one-quarter of computer users in the local area, or less than 2% of village members in August 2001. Furthermore, while users in the region surveyed were, in general, from a broad range of backgrounds, usage at the rural private sector kiosks was decidedly unequal, serving mainly wealthy male farmers from higher castes.

Potential does, however, exist for the expansion of the company's internet kiosk network in a way that will significantly broaden access, reducing the digital divide seen in this private sector initiative. The analysis therefore concludes with three recommendations for improving the project at the village (operator) level and three recommendations at the company (policy) level. At the village level, awareness and skill levels must be increased; information needs and existing use must be studied to facilitate content generation; and the kiosk model must be restructured to facilitate broader access. At the company level, a solid commitment should be made to explicit social objectives; an incentive program should be developed to encourage operators to reach out to a broader range of villagers; and strategic partnerships should be developed to increase demand and available content.

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TABLE OF CONTENTS

INTRODUCTION	4
INFRASTRUCTURE	9
Technical Infrastructure.....	9
Adequate Human Capital.....	10
Value-Adding End-User Content.....	10
FINANCIAL VIABILITY	12
Project Benefits.....	14
Negative Externalities.....	16
SOCIAL SUSTAINABILITY	18
Survey Methodology.....	19
Computer Awareness.....	20
Computer Use.....	21
Owner-Operator Interviews (E.I.D. Parry Kiosks).....	22
User Interviews (E.I.D. Parry Kiosks)	23
PROJECT ASSESSMENT (RECOMMENDATIONS)	25
Village Level Recommendations.....	25
Company Level Recommendations.....	39
CONCLUSION	41
BIBLIOGRAPHY	44
APPENDIX A (HOUSEHOLD SURVEY QUESTIONS)	47
APPENDIX B (METHODOLOGY)	55
APPENDIX C (SUPPLEMENTARY DATA)	60
APPENDIX D (CONTACTS AND INFORMATON SOURCES)	65

INTRODUCTION

In South India today, a number of ongoing projects seek to provide internet access to rural areas by combining computer, internet, and other telecommunications technologies in a profitable business model.¹ Yet, in spite of growing interest in this work, few formal evaluations have been performed on specific projects and little progress has been made toward increasing discussion of the strengths and weakness of each. Though public, private, and non-profit funds have been utilized in a number of different ways to stimulate rural internet development, evaluations to date have tended to focus on efforts led by public and non-profit organizations. Little attention has been paid to the results of private sector investment.

In failing to study the role that the private sector is playing in providing internet access at the grassroots level, we risk remaining unaware of models for internet provision that may be more effective than those motivated by the government, non-profits, and universities.² We also miss the opportunity to critique these models, pointing out the broader social and economic impacts of private investment in rural telecommunications infrastructure.³ This analysis seeks to fill a portion of the existing information gap, asking under what conditions the private sector can successfully provide internet access in rural india.

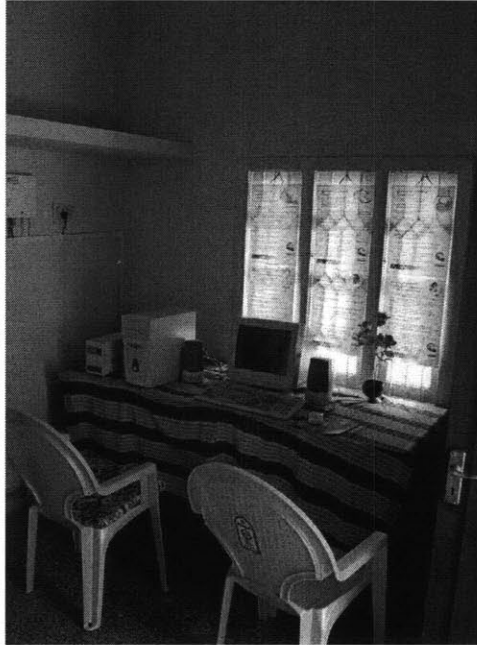
The model under study is that of E.I.D. Parry,⁴ a regional sugar cane processing plant in the Cuddalore District of Tamil Nadu, India, seeking to establish independent internet kiosks in rural villages with 500-1,500 households. Each of the Parry's Corner kiosks has a telephone, a PC, power back up, and in some instances, a printer. Most kiosks are set up in the home of a farmer selected by the company on the basis of his credentials. Community members can come into a Parry's Corner location and navigate the internet independently or with the help of the franchise operator. Parry employees paint an image of a village-based system of kiosk owner-operators whose Parry's Corners become the business hubs of villages.

¹ Kudaisya, Gyanesh. "India's New Mantra: The Internet." *Current History*. April 2001, pp. 162-169.

² Fuchs, Richard P. "Little Engines that Did: Case Histories from the Global Telecentre Movement." IDRC Study/Acacia Initiative. June 1998. <http://www.idrc.ca/acacia/engine/index.html>. Senegal offers a strong example of a successful rural telecom initiative that contrasts to many internationally funded, well-equipped telecenters around the world.

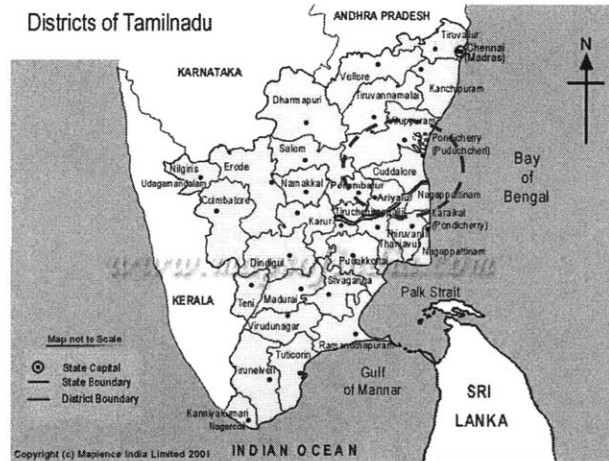
³ Richardson, Don. "The Internet and Rural Development: Recommendations for Strategy and Activity." 1996. Available at <http://www.fao.org/waicent/faoinfo/sustdev/CDdirect/CDDO/contents.htm>.

⁴ A product of a series of twentieth century mergers and re-incorporations—most notably in 1956 when East India Distilleries and Sugar Factories Ltd. purchased all equity capital in the two-hundred-year-old Parry & Co. Ltd, in 1975 when the company was Indianized as E.I.D. Parry (India) Ltd., and in 1981 when the company became a part of the worldwide Murugappa Group—E.I.D. Parry produces farm inputs, sugar, and sanitary ware for sale in India and abroad. In 2000, fertilizers contributed about three-fifths of its income (752 crore), sugar about one-fifth (236 crore) and ceramic sanitary ware about one-tenth (117 crore).



An internet kiosk as installed in an operator's private home

Ultimately, E.I.D. Parry plans to expand its IndiaAgriline project, providing services similar to those offered in the Cuddalore District at its three other Tamil Nadu factories. The goal is the creation of a scalable model that can be readily expanded to provide service throughout South India. Eventually kiosks would provide rural villagers with a broad range of services, to include e-governance, education, entertainment, emergency health-care, and computer-based services such as word-processing. In all locations, connectivity to the internet would be managed by outsourcing to local service providers. Content would be made available in a number of local languages and web design would concentrate on audible and visual interface systems to allow less literary members of communities unassisted access to kiosks. At the end of 2001, E.I.D. Parry had approximately twenty kiosks operating in the region with plans for seventy more by the end of 2002. In the long term, Parry officials hope to install a Parry's Corner in each of the approximately 275 villages with ties to the company, at a cost of around \$3.2 million. If the plans are successful, the kiosk network would serve almost 25,000 farmers in the Cuddalore District.



This assessment of the E.I.D. Parry project is broken down into three major sections: viability of infrastructure; financial sustainability; and success in meeting the company’s own social objectives. In the first section, viability of infrastructure, we discuss the need for a comprehensive delivery mechanism that includes reliable technology, adequate human capital, and value-adding end user services. In the second, financial sustainability, we describe how the company has strategically planned the rollout of rural kiosks to allow for the need to increase awareness of services among villagers and accommodate the vicissitudes of a changing regulatory environment. In section three, we evaluate the company’s success in providing broad, socially beneficial services to all members of rural communities.

The evidence offered in this study suggests that the E.I.D. Parry project is successful in addressing the challenges involved in creating a viable rural internet infrastructure. The company has also developed a conceptually sound plan for making individual kiosks profitable. Its success, however, in meeting stated social objectives is less clear. Though mechanisms exist to expand access to broader, more diverse segments of village populations, the project has not, to date, demonstrated an ability to deliver service to the vast majority of villagers. We shall, therefore, spend a significant portion of the third section on social issues, discussing problems and potential solutions.⁵

In concluding, we find that the digital divide exists in rural South India. Yet, it exists in a different form than one might expect. An intense survey of rural households in the Nellikuppam area

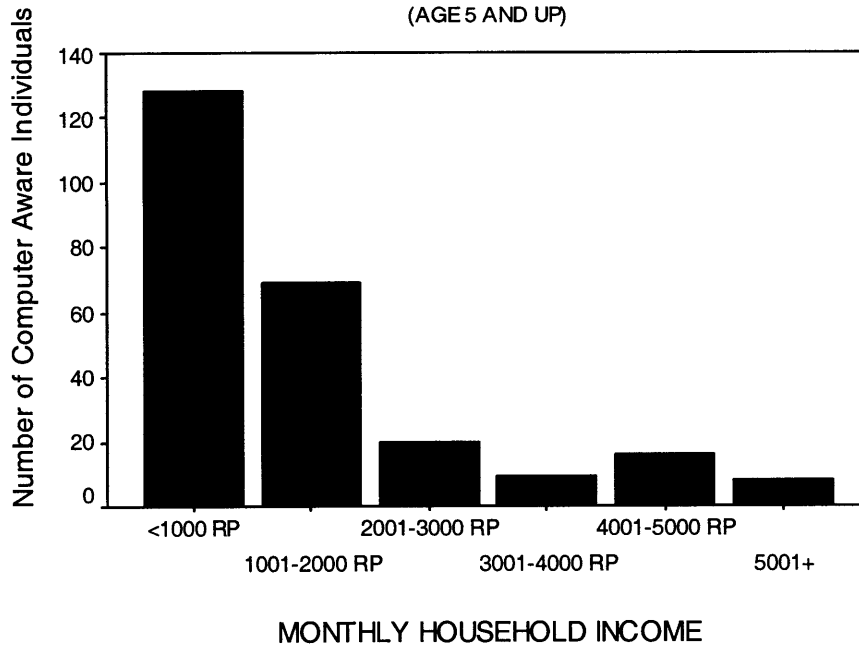
⁵ It is important to note that the E.I.D. Parry project was not selected as a representative model and that conclusions, therefore, are not necessarily generalizable to other projects. Rather, it was selected because of its apparent viability and the willingness of company officials to cooperate in the investigation. The goal is the presentation of findings in a clear and concise way that allows broader discussion of similar efforts in South India. The data used in the analysis is a combination of field observations, interviews, company reports, and an independent survey of villages conducted in August 2001. one particular framework, presenting findings in a clear and concise way that allows broader discussion of similar efforts in other parts of the world.

demonstrates that use of computers and the internet is, at least on one level, demographically representative. Though only one-quarter of rural villagers in these areas are computer aware and an even smaller seven percent actually use computers, the body of actual users is demographically diverse across key variables such as gender, wealth, education, and age. Thus, a divide exists in the sense that large segments of the population remain unaware (75 percent) or unable (93 percent) to use computers. Among the computer aware and computer users, however, we find a broad range of villagers using computers—a range that is very demographically representative of the region.⁶ These findings suggest a need to refine our current understanding of the digital divide in at least parts of rural India, accepting that progress is being made on at least one level of the digital divide. And it is only through a thorough analysis of the E.I.D. Parry plan to bring internet access to rural areas that we take note of this interesting new development in rural telecommunications.

⁶ The broad demographic range of computer aware and computer using individuals results from complete penetration of households. The idea of demographically representative computer awareness and computer use is based on the data collected in 222 households in the region. Of these 222 households, 59 were computer aware and 15 had computer users. Two hundred sixty-three individuals in the 59 computer aware households—all household members over the age of five—had a basic awareness of computers appropriate to their age. Seventy-four total individuals in the 15 computer using households—all household members over the age of five—had used a computer during the year prior to the survey. This suggests that once computer awareness and computer use has penetrated a household through at least one member, other household members find the technology more accessible and are drawn to learn more or to experiment with usage. Data does, however, seem to indicate that, within the computer aware and computer use, frequency and type of use does seem to be related to variables such as gender and age, with men, the literate, and the young using computers more frequently and in a more sophisticated manner. More detailed research must be conducted in this area to gain a more comprehensive understanding why, how, and with what frequency computers are used in these households.

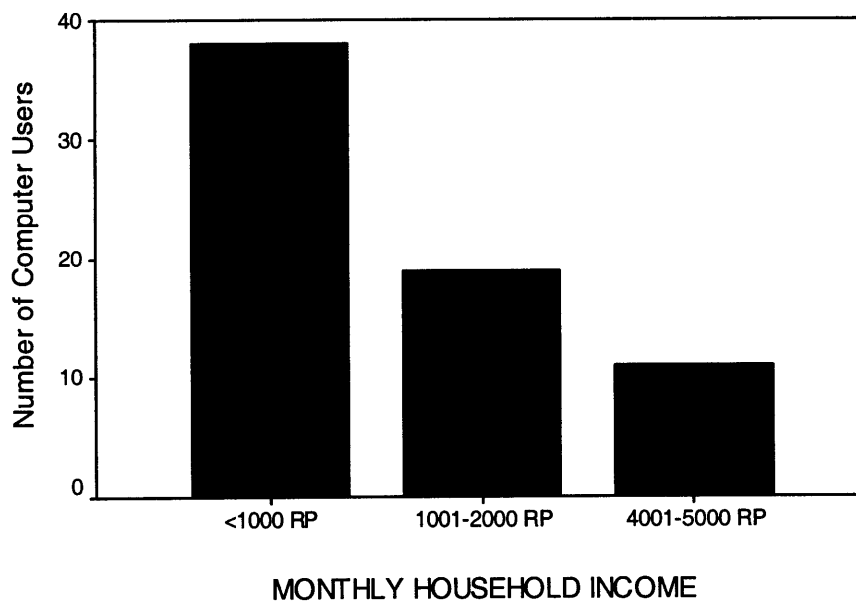
COMPUTER AWARENESS

(AGE 5 AND UP)



COMPUTER USE

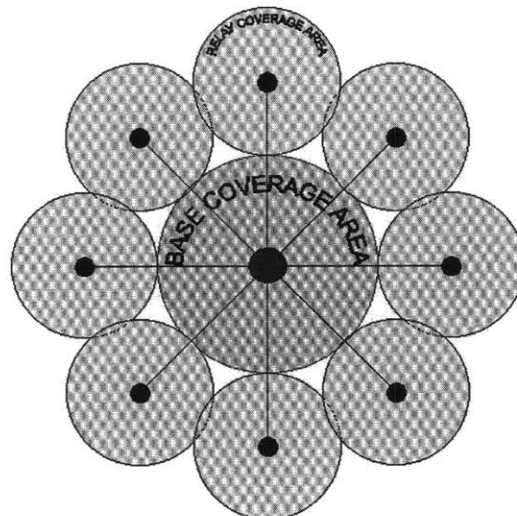
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INFRASTRUCTURE

The first major challenge in providing rural internet access is the creation of a viable infrastructure capable of delivering reliable, value-adding service to end users. The E.I.D. Parry project meets this challenge by using a sound technical infrastructure, adequate human capital, and providing value-adding end user services. What follows is a detailed assessment of these three criteria.

Technical Infrastructure. Supporting the expansion of the E.I.D. Parry network of internet kiosks is a wireless local loop (WLL) telephony system, consisting of a central base station linked, via remote relay stations, to kiosk service points within a 30 kilometer radius. At the start of the IndiaAgriline project, E.I.D. Parry investigated a number of internet access technologies available in India, ranking them in terms of cost, reliability, and potential to provide access in rural villages, before finally settling on indigenously developed CorDECT technology, patented by IIT Madras.⁷ The CorDECT WLL gives 35/70 kbps digital internet and telephone access to each subscriber without the use of a modem. It uses a base station relay system to extend its range to all subscribers within a 25-30 km radius of base stations.⁸ The cost of infrastructure installation is even lower than that for an urban wire line connection and concentrates normally bursty internet traffic in a way that reduces line usage and, thereby, lowers costs below those of conventional modem-based access.⁹



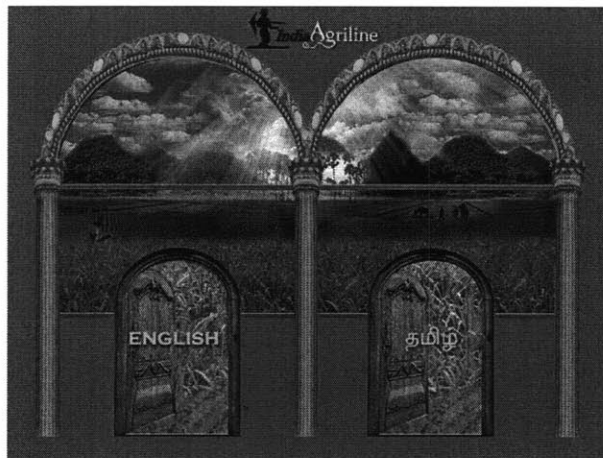
⁷ IndiaAgriline is E.I.D. Parry's name for its internet kiosk initiative and the supporting website.

⁸ While telephone access was technically possible from the project's start, it was illegal to use the service until April 2002. E.I.D. Parry supported the dual-capability system until new legislation took effect, allowing revenue from telephone use to supplement that gained from internet access and, thereby, make kiosks financially self-sustainable.

⁹ Jhunjhunwala, Askok. "Towards hundred million Telephones and 25 million Internet connections in India." <http://www.tenet.res.in/Papers/100m/100m.html>

Adequate Human Capital. In order to make the network of kiosks functional, E.I.D. Parry needed computer literate, motivated franchise operators. Because of its longstanding ties to villages in the Cuddalore District, E.I.D. Parry was able to select quickly and effectively a number of individuals for training. In a week-long training course, these individuals were taught the basics of computer and internet use, with particular emphasis given to farmers' use of Parry's online transaction database. In all, 150 farmers were selected and trained during the initial stages of the project. From among these individuals, E.I.D. Parry selected its initial twenty operators.¹⁰ Supplementary training programs designed to expand operator knowledge are currently in development and will be provided to actual kiosk operators free of charge.

Value-Adding End-User Content. In order for kiosks to be successful, they must generate demand through value-added services. E.I.D. Parry has made a concerted effort to create a viable company website that provides farmers in the region with useful and desirable information. Called *IndiaAgriline*. The site's explicit objective is *to catalyse e-commerce in rural agricultural and non-farm products and enable economic well-being in rural communities and to provide a network of partnerships which bring commerce, technology, and value added information to help expand the choices of rural India and make farming and small and medium enterprises of rural India more profitable.*¹¹



IndiaAgriline was created under the premise that the single best way to improve the efficiency of Indian agriculture is to develop a better method of disseminating relevant information to the

¹⁰ E.I.D. Parry employees, guided strongly by the advice of field officers, selected willing individuals with a history of good relations with the company, of high standing in their communities, with a demonstrated proclivity for using the computer and internet, and with sufficient assets and education to act as a partner in the task of setting up the kiosk network. The initial twenty operators were all male, wealthy, and members of higher castes.

farming community. E.I.D. Parry's official position is that farmers need better information on farming practices, harvesting techniques, and market prices because it is the sub-optimal use of resources, combined with poor information, that has resulted in inadequate disposable incomes for farming and laboring families. Making IndiaAgriline accessible to the local population is a series of popups and voice-overs that access offline information CD databases provided at each internet kiosk. This dual system of online and local content allows farmers to navigate through a native language interface that uses distinct clear graphics and audible content to distribute desired information.¹²

Because of E.I.D. Parry's close link to the sugar cane farming community in the Cuddalore District (serving 100,000 registered sugarcane growers) and the fact that it provides farm inputs to almost 3,000,000 end users throughout India, the company stands at a critical juncture between available information and the nation's farming community. E.I.D. Parry has therefore combined its own expertise with that of established agricultural content providers such as the Tamil Nadu Agriculture University and its Research Stations, Tamil Nadu University for Veterinary and Animal Sciences, the National Horticulture Board, AMM Foundation, Murugappa Chettiar Research Center, and other producers of agriculture-related media. Much of this information has been made generally available on the IndiaAgriline website. This includes information on farming techniques; market prices; available supplies; farmers' bills and receipts; agriproduction updates; industry news; statistics on Indian agriculture; laws and regulations relevant to farming communities; weather reports; satellite imagery to facilitate mapping and crop assessment; information on financial services; and information on E.I.D. Parry as it relates to communities and businesses. Finally, the IndiaAgriline portal provides a web-based farming and transaction records database with information for registered sugarcane growers of E.I.D. Parry. By logging into this Cane Management System (CMS) from the rural internet kiosks under study here, farmers have the ability to check the status of their bills and receipts from E.I.D. Parry.

Other utilities such as a farming calculator (that allows the calculation of the costs and quantities of required inputs); farm advisory services; satellite imagery of surrounding lands; information on financial services such as savings, loans, and investments; information on crop and personal

¹¹ <http://www.indiagriline.com>

¹² While called a portal by company representatives, the site does not, at this stage, meet the normal criteria for a portal. The site actually resembles a *portal* more than a true portal. Whereas a portal attracts a broad (horizontal) range of users, a portal appeals to a more narrowed (vertical) audience. Vortals focus on a group of people with a specific passion, interest, or need. In E.I.D. Parry's case, the primary audience is farmers seeking information on crops and payments. Relatively little attention has been given to pushing users out beyond IndiaAgriline to the larger world wide web. The potential for revenue generation through advertisement and sales has not been fully explored,

insurance systems; personalized accounting software; information on health services and animal husbandry; links to official government forms and reports; links to government development schemes and programs that offer aid to rural areas; e-mail connectivity to government officials; links to police, fire, and emergency relief services; information on educational services; electronic community message boards; low-cost e-mail access; educational and entertainment software; and links to NGOs providing useful services and information are also planned for the portal.

The benefits to farmers have been both immediate and tangible. In its existing corporate structure, E.I.D. Parry's Nellikuppam factory has eight divisional offices that distribute information and sell agricultural supplies to farmers. Field officers provide long-term service to in specific office areas, allowing them to become familiar with the local operating environment. While this system did extend E.I.D. Parry's influence in the region and provide farmers with more localized services, it proved inconvenient for farmers. Often roundtrip travel times for farmers to local offices were a day or more with no guarantee that the desired information, payment, or supplies would be present upon their arrival. The extension of this organization network through the provision of more localized internet access eliminated much of this inconvenience and waste. Farmers are now able to check the status of their payments, receipts, and supplies online before traveling to divisional offices. Divisional officers, in turn, receive more feedback from farmers and are better able to service their needs. Equally important is the fact that the improved flow of information on market prices, supplies, and financial transactions reduces the number of middlemen (both private buyer-sellers and E.I.D. Parry employees) between farmers and the Nellikuppam factory.¹³ Information and transactions are more transparent, making payments and service provision more rapid and reliable. A likely side benefit of this system will be a reduction in bribery and corruption. Both company and farmer benefit from the arrangement.

remaining secondary to the larger goals of providing agricultural information and managing regional sugar cane production.

¹³ Interviews with both E.I.D. Parry field officers and area farmers suggest that, depending on a farmer's information needs and the size of the farm, the system may save a farmer 3-10 trips of 3-8 hours each to field offices each year.

FINANCIAL VIABILITY

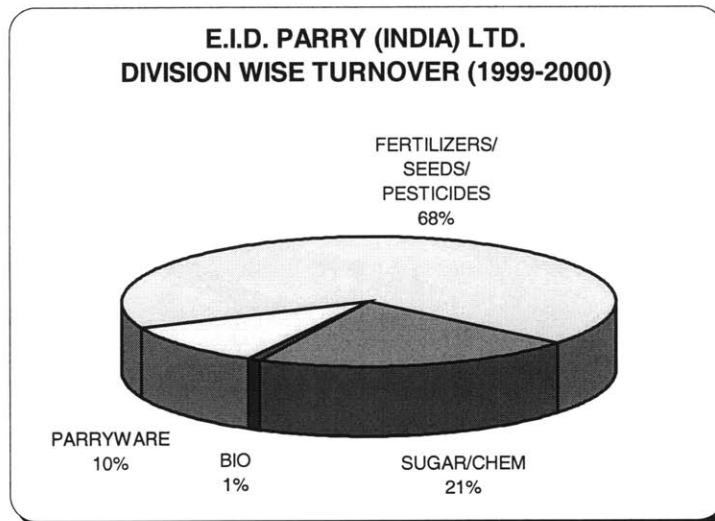
The next major hurdle in the path to creating a viable rural internet network is ensuring the profitability of operating kiosks. E.I.D. Parry developed a conceptually viable solution to this problem by looking at long-term rather than short-term operability and profit. Actual profitability, however, has yet to be proven and will depend heavily on two key variables: the ability of the CorDECT network to provide telephone service at lower prices than traditional copper line access and the ability of kiosks to generate income through the provision of supplementary services such as internet access, computer training, and printing.

In the short term, E.I.D. Parry's priority was the establishment of a core network that links it more closely with key farmers in the Cuddalore District while promoting services that increase general awareness of computers and the internet. To this end, the company completely subsidized the capital and operating costs of early kiosks to establish an initial structure that could be expanded when the economic and regulatory climate allowed. The computers, CorDECT infrastructure, and operating expenses were paid for by the company, with the expectation that each kiosk would eventually become self-sustaining. These kiosks would be the catalyst for the development a community of Parry farmers who could provide low cost connectivity across the 300 villages around Nellikuppam.

The rationale for these subsidies is twofold. First, through the establishment of a viable kiosk network, E.I.D. Parry hopes to meet a key strategic goal. In an examination of the company's operations, it is immediately apparent that E.I.D. Parry is extremely reliant on agricultural production (which provides 89 percent of its total revenue).¹⁴ Thanks to favorable weather conditions, better management techniques, and the education of local farmers in proper growing techniques, the four sugar units crushed 34.37 lakh tons of cane in 2000-2001 compared to 25.51 lakh tons for the year ending March 31, 2000—an increase of 34.7 percent.¹⁵

¹⁴ <http://www.eidparry.com/AGMReport.htm>

¹⁵ Of particular importance to this study is the belief that the education of farmers has played a significant role in the overall increase in production. While this seems a reasonable assumption, sufficient data is not available to perform a rigorous study of the correlation between particular variables and production levels. This data, however, is not necessary. What is important is not the actual impact of education on production levels but the fact that such a belief has motivated E.I.D. Parry to make investments in projects like the kiosk operation under study.



SOURCE: 26th Annual General Meeting of the Share holders of E.I.D. Parry (India) Ltd, Chennai, September 13, 2001

In spite of these improvements, E.I.D. Parry and companies like it, have not been able to compete effectively in the international market. The result has been a continued stockpiling of surplus sugar, resulting in a national surplus of 127 lakh tons—nine months' supply. The situation is even worse in Tamil Nadu, where the oversupply amounts to fourteen months of the State's sugar requirement. The result of these surpluses has been a depressed domestic price and larger than necessary operating and storage costs for sugar processors. Only one real solution exists for this problem: reduction of production costs to a level that allows profitable export to the world market. E.I.D. Parry hopes to meet this objective through a comprehensive education and management program that increases efficiency of production (lowering costs). The internet kiosk program examined in this study, by providing better information and services, is an important part of this cost reduction strategy.

Project Benefits: E.I.D. Parry's strategy yields two important side benefits. The first relates directly to production. While better educated, more knowledgeable farmers appear to be gaining higher yields and, therefore, lower prices (one benefit), they also appear to be more receptive to E.I.D. Parry's suggestions about crop production. The potential result (in average years not impacted by natural disasters such as drought or disease) is an increased ability on E.I.D. Parry's part to control quantities produced, to moderate production at reasonable levels and, thereby, raise domestic prices to a level that ensures reasonable profits for farmers and laborers.

The second side benefit is the improvement of E.I.D. Parry's public image. By providing increased services and information to farmers and local villagers, the company gains the image of a beneficent overseer of the regional sugar economy. In addition, a content farmer is less likely

to sell sugar cane to an otherwise equal competitor. Loyalty is a prized commodity in an increasingly competitive industry where rivals constantly seek to gain ground in the traditional service areas of other firms.

Thus, an overall analysis of E.I.D. Parry's economic condition suggests three strategic reasons for its support of a public internet kiosk program in rural areas: the potential to improve production efficiency; the potential to manage production quantities through improved relations with local farmers; and a desire to promote the company's image as a socially conscious corporation seeking to improve the quality of life of all Indians. All of these factors are necessary to compete not only in international markets but also prevent impingement into the company's domestic market by other sugar producers.

Furthermore, this first wave of subsidized kiosks was placed in the homes or businesses of relatively wealthy individuals who could more readily afford to make the loan or lump sum payments required for a kiosk franchise. These individuals perceive kiosks to be more than a business investment. Having a computer is an investment in their family's future well-being, a means of obtaining status in their community, and, in some cases, a philanthropic service that benefits fellow villagers. This combined interest in kiosks—profit and personal benefit—provides a more solid base for what might otherwise be perceived as a risky investment.

In the long term, with the repeal of the existing ban¹⁶ prohibiting wireless telephone service in rural areas, the company hopes to turn the core network kiosks into profitable enterprises charging between \$.20 and \$.60 per hour for various services. This core network will be able to generate revenue through the provision of telephone service at lower costs and to a broader area (in addition to the revenue generated from the sale of computer and internet time) and subsidies will be removed. Once the core network of kiosks proves profitable, they will be used as models for the expansion of Indiagriline franchises to include less affluent operator-owners. These individuals, more dependent on operating profits, will work to increase demand and attract a broader segment of village members until, eventually, there will be a comprehensive network of kiosks providing almost universal access.

It is important to note that this arrangement has the potential to work because it ties together computer, internet, and telecommunications. The ability to provide wireless phone access at discount rates will allow operators to generate revenue to offset the capital investment of a computer. In essence one function, discount telephone, will subsidize the others, computer and

¹⁶ <http://www.indiasoftware.com/news/n0104.html>

internet, until awareness and content are sufficiently developed to generate demand for computer and internet access in larger segments of village populations.

Negative Externalities: Before continuing with this analysis, it is reasonable to hypothesize negative externalities associated with E.I.D. Parry's sugar production strategy. We start with economic impacts. First, an increase in per hectare quantity of sugar produced will, assuming demand remains relatively constant, not only lower prices but also eliminate jobs for landless laborers. The result would be even more extreme levels of poverty for the State's most marginalized laborers.

Still other negative social impacts can be expected. It is important to note that farm products and sugar production together account for 89 percent of E.I.D. Parry's annual income. It is from districts like Cuddalore (where the internet kiosk pilot program is being implemented) that E.I.D. Parry derives an enormous portion of its revenue—both through the sale of products supporting farm production and from the production of sugar-based products derived from regional sugar cane production. Over the past decade, the company has been tremendously successful, establishing a vertical hierarchy of production in which it provides basic inputs to farmers, then collects, processes, and sells sugar-based products. In the last five years, its turnover and assets have more than doubled. The establishment of viable internet kiosks provides E.I.D. Parry with specific, tangible benefits such as an improved information and management network that helps control crop production, managing the flow and quality of sugar cane through a system of reminders and two-way communication that keeps large, land-owning farmers satisfied. Given these facts, it is reasonable to assume that, in providing internet access to rural areas, E.I.D. Parry will reinforce its existing vertical network of production—a vertical system of production that resembles in some ways the feudal relationship of medieval Europe between king, landlords, and landless laborers.¹⁷ The danger for the region is that the kiosk, in their success, may solidify the existing feudal relationship by improving farmer profits and laborer salaries, creating a feeling of success that slows government initiatives such as land reform.

Finally, the kiosk may well result in temporary exasperation of caste conflict. The Cuddalore District already suffers from frequent outburst of caste-related violence. Attempts to provide

¹⁷ The author was able to ascertain through a series of interviews with E.I.D. Parry employees and independent software developers in South India that the firm may also have been motivated by similar initiatives underway in other companies. Indeed, competitors in other regions seem to be moving in the same direction, seeking to solidify their local holdings and gain a competitive advantage that might allow successful penetration of other markets such as the Cuddalore market currently dominated by E.I.D. Parry. The need to match other competitors' initiatives may thus have been a major contributor to E.I.D. Parry's decision to develop its kiosk initiative. If not the initial motivation, it would seem to be a requisite part of present corporate plans that would attempt to disallows encroachment into Parry's market.

universal internet access will almost certainly engender some conflict at the village level. This conflict, however, will likely be temporary as each village evolves its own means of dealing with the situation. Public Call Offices have faced a similar situation in the past and successfully adapted to accommodate and service different castes.

The existence of negative externalities to E.I.D. Parry's business and social strategy in no way implies the strategy is fundamentally flawed. Rather, it suggests that the strategy can be improved and negative externalities addressed. E.I.D. Parry operates under a set of clearly enunciated social objectives that measure success as more than a function of the bottom line on a balance sheet. In a series of interviews with middle management and field managers, it quickly became apparent that there is a strong belief among corporate workers that the company, while seeking a profit, is genuinely striving to put something back into the communities from which it derives its profits. For this reason, E.I.D. Parry channels a part of its revenue to social welfare projects—especially those like the internet kiosk initiative that promise to improve its bottom line. Which comes first? Profit or social welfare? In the end, it is an impossible question to answer. The two are inexorably linked with the provision of social benefits improving the bottom line over the long term.

SOCIAL SUSTAINABILITY

E.I.D. Parry's own policies call for reasonably-priced access to kiosk services—to include relevant internet content—for as many rural village residents as possible. In order to gain a general idea of the quality of existing kiosk service, researchers conducted an intense survey of 222 households (1063 individuals) in three villages within the E.I.D. Parry kiosk network. The information collected allows us to paint a broad picture of village demographics, levels of computer awareness, current usage patterns, and desired services. This survey was then supplemented by interviews of both owner-operators and kiosk users to provide a more detailed understanding of the role operating kiosks play in village life.¹⁸

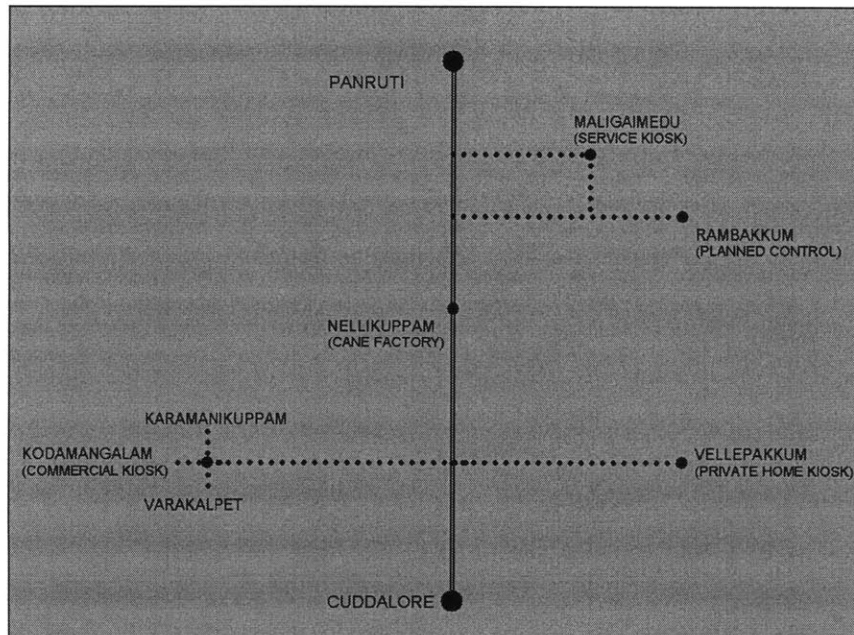
Survey Methodology

The methodology of the study includes a combination of village, household, and kiosk operator surveys; group and individual interviews; and observation of existing village life, collecting both quantitative and qualitative data. The study relies heavily on qualitative data and daily journals as a means of understanding village life and how the E.I.D. Parry model actually operates.

The household survey collected data in three village sites in the Nellikuppam area of the Cuddalore District. Each village contains (or has scheduled) a single internet kiosk installation. The first kiosk, about 12 kilometers north of Nellikuppam in a 1042 household village named Maligaimedu, is located along with the local post office and public call office in the foyer of a private home. The second, 8 kilometers south of Nellikuppam in a village called Vellepakkam, is the sole service provided in the foyer of a private home. The third, located at the nexus of three small villages of 500 households each—Karimanikuppam, Kodamangalam, and Varakalpet (henceforth known as **KKV**)—is scheduled for a commercial location between a jewelry shop and a pawn shop.¹⁹ Operating kiosks had been in place for approximately five months when this survey was conducted.

¹⁸ A team of fifteen students from the Centre for Entrepreneurship Development at Madurai Kamaraj University was employed by the author to collect data in the villages. All team members were bilingual, speaking both Tamil and English. Data was collected by the students in public interviews, household interviews, interviews of village leaders and businessmen, and through observation of each village's inhabitants over a two-day period. A total of 12 group interviews were conducted in the three villages. The author, a graduate student from the United States, was present only for test and practice interviews in order to avoid response bias. All data cited in this report was collected in August 2001.

¹⁹ In the original research proposal, a fourth site was proposed for examination. Rambakkum, a village of approximately 634 households with no kiosk planned for the foreseeable future, was to act as a control for the study. Unfortunately, at the start of data collection, the Rambakkum team discovered that two men had been beaten to death in a caste conflict the previous week. Villagers were consequently extremely suspicious of questions from outsiders, forcing us, to ensure the safety of team members and avoid the possibility of data distortion, to forgo study of this village. The need to exclude Rambakkum does, however, point out the extremely serious impacts caste has on village life in the region, a topic to be discussed at length in evaluation of the E.I.D. Parry kiosks.



These villages were selected because they are demographically similar to others in the region, ranging in size from 500 to 1,500 households with similar economic situation, ethnic composition, and social systems. The kiosk locations are also of three different types—adjacent to public or government services (Maligaimedu), standalone inside a private home (Vellepakkam), and at the heart of a small commercial thoroughway (KKV). The choice of distinct types of kiosk locations allows a broader examination of the impacts of physical and psychological location on kiosk success.

Computer Awareness

A key variable in any attempt to assess the potential success of a rural internet kiosk network is the overall level of computer awareness, here defined as *a rudimentary knowledge of the tasks a personal computer can perform and the services or skills that can be gained through computer usage*. While of the 1032 individuals over the age of five surveyed, 263, or 25.4 percent, had some knowledge of computers and their uses, data shows that where it exists, computer awareness, for the most part, is very evenly distributed across village members. One hundred forty-five, or 55.1 percent of the 1032 sample size were male—a number exceedingly close to the 52.9 percent male population represented by the survey. Level of education shows a similarly even distribution with 34.6 percent, 36.6 percent, 23.3 percent, and 5.4 percent of villagers having no education, primary level education, secondary education, and graduate level education, respectively. These numbers very closely match the overall distribution of educational levels in

the larger survey population, suggesting that computer awareness is not closely linked to formal education. Age, like education, is not a significant determining factor in computer awareness. Nor do literacy in Tamil and English seem to be of much importance for computer awareness. In fact, a larger percent the computer aware subset is illiterate in Tamil (36.4%) than in the larger population (29.9%). In English the percent illiterate among the computer aware is almost exactly proportionate to its size in the larger population.

Extremely interesting is the lack of correlation between wealth and computer awareness. In an area where the wealthiest households generate over 15,000 Rp per month and the poorest earn less than 300 Rp per months, one might hypothesize that there would be significant differences in levels of computer awareness—that a digital divide of awareness would exist. Comparison of computer awareness levels to two different indicators of wealth—cost of home, and monthly household income—showed no statistically significant deviation from the expected values. The only pattern that seemed to emerge was a trend (though not statistically significant) toward slightly greater awareness levels among the poorest and richest extremes of the population.²⁰

Computer Use

A second key factor in understanding the E.I.D. Parry network is the existing pattern of computer usage *among all possible locations and by all users* in the three-village area. Only 74 individuals of the 1032 over the age of 5 interviewed in the survey had actually used a computer—28.1 percent of the computer aware population and 7.1 percent of the entire population. The vast majority of these users were regular users with 41.9% using a computer once a week and another 48.6% using a computer daily. As with computer awareness, computer use is remarkably evenly spread across gender, level of education, and age. Seventy-three percent use computers most often for education and training. The E.I.D. Parry portal, business affairs, government services, news, and entertainment each draw about 5% of the remaining primary

²⁰ One might hypothesize ambition and access, respectively, to explain these differences. This counterintuitive finding, though it cannot be explained by the information available in this report, merits further study.

Another observation that merits further analysis is the difference in computer awareness levels between Maligaimedu (1042 households) where the Parry's Corner kiosk is adjacent to commercial and governmental uses and Varakalpattu (512 households) where the kiosk is in the foyer of a private farmer's home without adjacent services. Though surveyed individuals from Maligaimedu represent 34.2% of the total survey population, they represent only 21.7% of the computer aware population. In contrast, Varakalpattu represents 32.6% of the surveyed population but 42.6% of the computer aware. Both are statistically significant variations from the expected values, suggesting that service adjacency and the types of uses surrounding a kiosk are less important to generating computer awareness than other variables, such as the operator's attitude toward use and spatial location of the kiosk with the village as a whole. (An alternate hypothesis is that the kiosks as they exist today are largely irrelevant to levels of computer awareness and that awareness is dependent on a third confounding variable.)

usage. Sixty-four percent of the 74 users use a computer at work, school, or in other locations. Thirty-six percent use village kiosks.

The question of the digital divide is raised once again with computer usage with unclear results. As with computer awareness, the relationship between computer use and monthly household income appears weak (though the sample size is not large enough for statistical inference). With cost of home, however, there is a correlation that is significant at the .01 level (two-tailed). Those households with home worth over 100,000 Rp have up 39% of computer users but only 12.1% of surveyed households. Given the fact that there is a statistically significant correlation between monthly household income and cost of home at the .05 level (two-tailed), this finding merits further investigation and may suggest the need to make an important distinction between liquid income and inherited assets, with more established families using computers at a significantly higher level than other villagers.

Statistically valid description of kiosk computer use in the three-village area is not possible because of the very small number of users (only 19 of the total 74). For this reason, we turn to interviews with operators and users to characterize kiosk use—a subset of the larger population of computer users described above. (Many computer users have never visited the kiosks, yet regularly use a computer and access the internet at work or school.)

Owner-Operator Interviews (E.I.D. Parry Kiosks)

Vellepakkam. Mr. Ramachandran, the 31-year-old kiosk operator in Vellepakkam (512 households) with a M.A. from Pondicherry University, opened his kiosk in February 2001. Five months later, about 5-6 people visit his home each day to use the kiosk, mostly to access the IndiaAgriline website. Mr. Ramachandran estimates that about 90 percent of the kiosk use comes from farmers accessing Indiagriline's Cane Management System to check personal agricultural accounts. Each visitor spends about 15 minutes online for a total weekly usage of about 8 hours.²¹ Family members and close friends may spend another 5-20 hours online (e-mail and chat programs) and 5-20 hours offline (word processing and computer games) per week. According to Mr. Ramachandran's estimates, there are about 15 people in the village capable of offline use of the kiosk computer. These individuals may use the kiosk offline about 1-3 hours per week. Usage is almost exclusively male (even within the family), with only one instance of 6-7 women coming together to use the kiosk one evening.

²¹ Many of the users each week are regular customers. Mr. Ramachandran estimates that about 60 villagers have visited the kiosk since opening.

In his view, the E.I.D. Parry initiative is a way of paying communities back for 150 years of service to the company. He explains, "I recognize that the costs of using the kiosk may be too high for most villagers. If necessary, I'm willing to offer service at a discounted rate, subsidizing those individuals who cannot afford access. If costs should be particularly extreme and demand lower than expected, in order to provide the community with this service, I'd consider offering free access to villagers." When questioned about the lack of current use, Mr. Ramachandran explains that people are slowly becoming more aware and that he expects use to grow.

The real challenge, he recognizes, comes in providing service to the poorest, lowest caste members of the community. While he is theoretically willing to allow them to use the kiosk in his home, he does not know if neighbors would accept such use or whether the Dalit population would trust an offer on his part. His concern is a valid one. Just 500 meters away on the other side of the village, inhabitants of the nearby colony labor on part of Mr. Ramachandran's 35 acres of land. Bringing them to the kiosk and providing services that they can use seems an insurmountable task.

Maligaimedu. About ten kilometers away, Mr. B. Sridharan, the thirty-six year old kiosk operator in Maligaimedu (1042 households), has turned the front rooms of his home into the center of village communications services. In addition to the Parry's Corner kiosk, he runs the village post office and the only local public call office (PCO). Mr. Sridharan explained that, while he had huge startup problems (hardware problems and irregular service), his kiosk now receives about ten visitors a day. Five are farmers who check the IndiaAgriline website; three are students who use e-mail, surf the internet, play games, and check exam results; and two are children who, guided by more experienced users, simply explore. One or two of these visitors each day is female. About 50-60 village members are regular users; 90-100 villagers have visited the kiosk to see what services it provides. Most visitors spend 15-30 minutes at the kiosk during each visit (for a total of about 15-20 online hours and 10-20 offline hours each week) . Usage tends to be concentrated in the mornings and early evening before and after the workday. Often farmers and students visit the kiosk in groups of 3-5, turning usage into a sort of informal gathering.

When a charging plan has been developed by E.I.D. Parry, Mr. Sridharan plans to continue to provide free access to farmers but charge students. He views the kiosk as a community service and wishes to keep it open to all those who need farming information. He will charge those who use the kiosk for entertainment. Profits will arise from associated services such as telephone and printing. The challenge, he explains, will be providing useful services at a lower cost than can be obtained elsewhere.

The story is much the same in other kiosk locations in the area with most operators describing similar usage patterns. The number of visitors increases or decreases with population but the ratio of users to inhabitants is about the same. From the results of five operator interviews in the area, we generalize the usage pattern in Parry's Corner kiosk villages: *35-40 visitors each week per 500 households; total online usage each week of 8-10 hours per 500 households (not including kiosk operators and their families); usage by women less than 10 percent of the time; and no usage by lower caste members of villages.*

User Interviews (E.I.D. Parry Kiosks)²²

Interviews suggest that E.I.D. Parry kiosk users in the region tend to share at least one of two common characteristics: high level of education or land ownership. They tend to range in age from 15-40 with older individuals typically seeking business-related or farming information. Younger individuals use a broader range of services: e-mail, word processing, information

²² Information based on twelve interviews by graduate students from Madurai Kamaraj University with villagers in the three-village area.

search engines, and job hunting services. They are generally pleased with the new services that the internet brings to villages but would like to see services that provide better access to medical professionals and matrimonial information. Both groups expressed a willingness to pay 10-15 rupees per hour for online services they are currently using and between 3-5 rupees per hour for offline access.

One 36-year-old male in Maligaimedu—a farmer with 10 acres of land—spends 30 minutes each day on the IndiaAgriline site and internet checking farm prices and looking for the latest news and cricket scores. Whereas, in the past, he traveled to the market twice a week (a one-hour roundtrip) for crop prices and other agricultural information, he now gets the information via the IndiaAgriline website. In explaining the benefit he receives, he makes an important point: once charges for services begin, he will reduce his usage to twice a week. If the charge to access market prices online is greater than the cost of paying someone's bus fare to the nearest market town, he will stop using the service altogether. His story is typical for farmers in the region. The internet is a way of improving life. If it cannot provide better service at lower costs, it is not useful and will be set aside.

From these interviews, we learn several important lessons: existing Parry's Corner kiosk users represent a very narrow portion of the population (being better educated and wealthier than most villagers); current internet use levels have been elevated by free service; users plan on curtailing usage once charges begin; and cost of access must be lower or provide better service than existing modes of information collection and transfer.

The information gathered in these interviews is particularly interesting given the results of the household survey data analysis. What we see is a network of villages in which only 25% of the population has a basic level of computer awareness. Within the 25% computer aware subset of the larger population, only one-quarter have used a computer. Of these computer users, only 23% do so at Parry's Corner kiosks. Thus, the E.I.D. Parry kiosk network, as of August 2001, was reaching less than 2% of village members. Even more interesting is the fact that, while, as a whole, a broad segment of villagers are represented among the computer aware and computer users, usage at Parry's Corner kiosks is decidedly unequal, serving mainly wealthy male farmers from higher castes. Given these dramatic inequalities in service, what can E.I.D. Parry do to fulfill its own commitment to improving village life?

PROJECT ASSESSMENT (RECOMMENDATIONS)

The results of the household surveys and interviews suggest the E.I.D. Parry kiosks have fundamentally failed to meet the goal of providing universal accessibility. This section of the analysis therefore suggests new policies and courses of action that may increase accessibility and provide a broader, more representative user base. Recommendations are offered at the village and company levels. Village level recommendations involve changes or improvements in field operations that will increase the likelihood of constructing a successful kiosk network. Recommendations at the company level point out larger strategic changes.

Village Level Recommendations

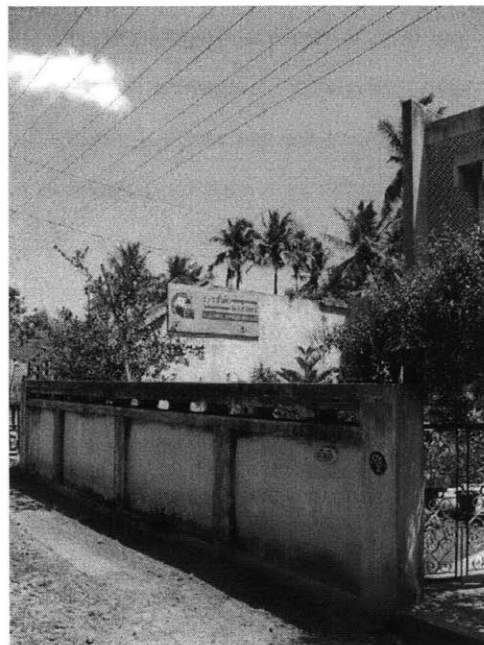
Data suggest three key areas for improvement at the village level of the E.I.D. Parry India Agriline project. First, *awareness and skill levels* must be increased in order to begin building the user base required for financially self-sustaining kiosks. Second, a *needs assessment* and market analysis, should be performed to understand better existing demand and what services have the most potential to benefit villagers while generating revenue. A key part of this effort will be the profiling of users to determine information needs and focus the content development effort. Third, *kiosks must be restructured to stimulate activity from a broader range of users*, thereby generating not only additional revenue but also helping meet social objectives. Key parts of restructuring will include reconsideration of kiosk locations—specifically placement of kiosks in private homes—and a renewed emphasis on kiosks as multi-service communication nodes that provide a broad range of services to users.

Awareness and Skill Levels. The market potential for internet kiosks in villages suffers enormously from a lack of computer awareness. Surveys demonstrate that 74.5 percent of village households have no real understanding of what a computer is. A critical question in the development of any internet provision scheme for rural area has to be whether the local people have the have a sufficient awareness of the services that computers and the internet can provide. A large number of households do not believe they understand how a computer works or what services it can provide. Of those with some level of awareness, almost three-quarters have never seen a desktop personal computer in person. E.I.D. Parry must work with kiosk operators and local officials to boost awareness.

Advertising should be placed in all areas of each village—not just in the vicinity of the kiosk—to ensure that everyone is made aware of the opportunities. Each village with a planned or existing kiosk should have a small advertising budget that allows E.I.D. Parry field officers to commission painted signs and host activities that draw attention to the potential for using computers to improve village life.

Adequate villager awareness of computers, the internet, and other kiosk services is a prerequisite for financially independent kiosk operation. If villagers do not know what kiosks can provide that is beneficial to them, they will never be customers. Yet, while awareness is sufficient to bring people to kiosks to seek (and pay) for services, it still does not motivate many of the most beneficially uses of a computer and the internet. It is a combination of skills and knowledge that will allow users to begin the type of independent, unsupervised use that allows them to access the full potential of kiosk technologies.

Less than seven percent of villagers can sit down at a computer and either perform basic offline tasks or browse the internet. The small group of villagers with computer skills ranges from those who can use particular applications in limited ways such as farmers who can follow links on an open a browser to those who can start a computer and use various applications for word processing, e-mail, and the internet.



Signs like the one outside the Arunachalam kiosk in Pagandi are a step in the right direction.

Surveys and interviews indicate that the young are extremely eager to learn about computers. It would therefore be beneficial for E.I.D. Parry to *randomly* select youngsters from households in each village and provide them with a 3-5 day training program on computer usage at newly installed kiosks. Individuals with computer experience can assist or teach other villagers who wish to use a computer or access the internet. These efforts might eventually lead to formal alliances with local schools willing to share in kiosk operating costs.

To reach adults in the villages, E.I.D. Parry could initiate a migrating computer training program run from a “web van” with a self-contained, battery-powered system that can be easily removed and set up in different areas of villages.²³ A van with two to three dedicated staff could run several training sessions a day, providing the initial contact with computers that might spur villagers to attend more formal training sessions taught by kiosk operators.

In an effort to increase computer awareness and skill levels, E.I.D. Parry should ensure that every village household has at least one member who has seen a Parry’s Corner kiosk in use and understands basic services provided. The company should also work to make potential services seem appealing enough to motivate those individuals to return home and discuss kiosk services with other household members. The metrics for success would be the number of non-repeat households represented at a series of service demonstrations targeted at populations in different areas of villages and the quantity increase in kiosk advertisements throughout the villages.

²³ Similar projects have been successful in Malaysia and Zimbabwe. *Rural Access to Information and Communications Technologies: The Challenge for Africa*. The International Bank for Reconstruction and Development / The World Bank, 2000. <http://www.infodev.org/projects/afcon/afconexesum.pdf>

Needs Assessment. Assuming that there is a reasonable level of awareness and an adequate skills base, we then have to ask whether people can get the information they want the way they want it. Surveys reveal that people are eager for information—provided that that information is affordable, relevant, and accessible. Villagers expressed a desire to know more about those things most relevant to their lives: weather reports; agricultural information; and information on government programs. To this end, the existing IndiaAgriline portal provides a broad range of services that are useful to villagers: information on farming techniques; market prices; available supplies; farmers’ bills and receipts; agriproduction updates; industry news; statistics on Indian agriculture; laws and regulations relevant to farming communities; weather reports; satellite imagery to facilitate mapping and crop assessment; information on financial services; and information on E.I.D. Parry as it relates to communities and businesses. The IndiaAgriline site provides a web-based farming and transaction records database with information for registered sugarcane growers of E.I.D. Parry.

The best way to focus existing plans and brainstorm new services is through the identification of particular aspects of village life with which community members are more dissatisfied. Household surveys therefore evaluated the availability and reliability of existing information sources; satisfaction with the quality of information access; and the perceived quality of key services. The following three charts summarize the results.

	QUALITY OF INFORMATION ACCESS/SERVICES (COMBINED THREE-VILLAGES AREA)									
	LEVEL OF SATISFACTION				SERVICE SINCE 1999 IS?			PAY 10 RP/MONTH TO IMPROVE SERVICE?		
	UNSATISFIED	SATISFIED	NEUTRAL	RESPONDENTS (OF 222)	BETTER	WORSE	RESPONDENTS (OF 222)	YES	NO	RESPONDENTS (OF 222)
ACCESS TO COMPUTERS FOR LEARNING.	76.6%	13.9%	9.5%	158	28.2%	71.8%	124	70.5%	29.5%	122
ACCESS TO MATRIMONIALS.	76.4%	17.2%	6.4%	157	19.0%	81.0%	126	45.9%	54.1%	122
ACCESS TO EXPERIENCED MEDICAL PROFESSIONS.	70.6%	15.6%	13.8%	160	28.9%	71.1%	128	64.2%	35.8%	123
ACCESS TO GOVERNMENT SERVICES AND DOCUMENTS.	66.2%	19.1%	14.6%	157	27.8%	72.2%	126	57.3%	42.7%	124
ACCESS TO INFORMATION ON FARMING TECHNIQUES/ PRACTICES.	56.6%	23.8%	19.6%	189	48.7%	51.3%	158	57.7%	42.3%	156
ACCESS TO INFORMATION ON MARKET PRICES FOR CROPS.	51.9%	25.4%	22.8%	189	50.0%	50.0%	156	54.5%	45.5%	156
ACCESS TO INFORMATION ON AVAILABILITY OF FARMING SUPPLIES.	46.6%	36.5%	16.9%	189	49.4%	50.6%	156	55.2%	44.8%	154
ACCESS TO INFORMATION ON POLITICS, SPORTS, AND MOVIES.	45.9%	28.3%	25.8%	159	48.0%	52.0%	127	60.8%	39.2%	125
COST OF MESSAGES SENT TO FRIENDS/RELATIVES.	33.8%	29.7%	36.4%	195	61.3%	38.8%	160	57.6%	42.4%	158
SPEED OF MESSAGES TO FRIENDS/RELATIVES.	30.5%	26.4%	43.1%	197	71.3%	28.8%	160	61.1%	38.9%	157
ACCESS TO EDUCATIONAL PROGRAMS/TRAINING SCHOOLS.	29.9%	29.4%	40.6%	197	61.9%	38.1%	155	67.5%	32.5%	126

Data collected suggests that villagers in this area of the Cuddalore District are least satisfied access to computers for learning, access to matrimonials, and access to qualified medical professionals. Conversely, they are most satisfied with access to information on farming supplies, access to news, and existing means of communicating with friends and relatives.

	PERCEIVED QUALITY OF KEY SERVICES						
	COMBINED THREE-VILLAGES AREA						
	BAD	AVERAGE	GOOD	RESPONDENTS (OF 222)	BETTER (1999)	WORSE (1999)	RESPONDENTS (OF 222)
AMBULANCE SERVICES	92.9%	4.8%	2.4%	210	8.5%	91.5%	177
LEGAL SERVICES	84.7%	10.3%	4.9%	203	15.7%	84.3%	172
ELDERLY/DISABLED SERVICES	78.9%	8.6%	12.4%	209	11.9%	88.1%	176
CULTURAL SERVICES	73.2%	16.7%	10.0%	209	24.6%	75.4%	175
BANKING SERVICES	68.3%	11.2%	20.5%	205	34.3%	65.7%	172
SOCIAL SERVICES	68.3%	15.9%	15.9%	208	35.4%	64.6%	175
GOVERNMENT SERVICES	66.8%	22.6%	10.6%	208	26.0%	74.0%	173
MEDICAL SERVICES	58.4%	13.9%	27.8%	209	32.0%	68.0%	175
AGRICULTURAL INFORMATION	48.6%	23.1%	28.4%	208	59.1%	40.9%	176
TRANSPORTATION SERVICES	22.0%	22.5%	55.5%	209	80.8%	19.2%	177
COMMUNICATION SERVICES	18.4%	32.9%	48.8%	207	80.5%	19.5%	174
SCHOOLS	11.5%	36.8%	51.7%	209	88.4%	11.6%	173

The key services in which villagers most desire improvements are ambulance service, legal services, and services for the elderly and disabled. They are most satisfied with existing transportation services, communications services, and schools.

AVAILABILITY OF INFORMATION AND RELIABILITY OF EXISTING SOURCES (COMBINED THREE-VILLAGES AREA)											
CURRENT WEATHER REPORTS		RELIABILITY		PLANT DISEASE		RELIABILITY		PEST CONTROL		RELIABILITY	
NO SOURCE	21			AGRI EXTENSION OFFICE	15			NO SOURCE	5		
AGRI EXTENSION OFFICE	13	BAD	23	E.I.D. PARRY	12	BAD	12	E.I.D. PARRY	5	BAD	6
E.I.D. PARRY	9	AVERAGE	8	NO SOURCE	11	AVERAGE	11	AGRI EXTENSION OFFICE	4	AVERAGE	8
TELEVISION	5	GOOD	18	LOCAL SHOPKEEPERS	3	GOOD	13	WORD-OF-MOUTH	4	GOOD	8
WORD-OF-MOUTH	4			BOOKS/NEWSPAPERS/MAGAZINES	2			BOOKS/NEWSPAPERS/MAGS	2		
OTHER	2			WORD-OF-MOUTH	0			LOCAL SHOPKEEPERS	2		
RADIO	0			TELEVISION	0			RADIO	1		
LOCAL SHOPKEEPERS	0			RADIO	0			TELEVISION	1		
BOOKS/NEWSPAPERS/MAGS	0			OTHER	0			OTHER	1		
MARKET PRICES		RELIABILITY		NEW FARMING TECHNIQUES		RELIABILITY		FARMING SUPPLIES		RELIABILITY	
AGRI EXTENSION OFFICE	8			NO SOURCE	9			NO SOURCE	3		
E.I.D. PARRY	6	BAD	5	AGRI EXTENSION OFFICE	5	BAD	3	E.I.D. PARRY	3	BAD	2
BOOKS/NEWSPAPERS/MAGS	4	AVERAGE	7	E.I.D. PARRY	3	AVERAGE	8	BOOKS/NEWSPAPERS/MAGS	3	AVERAGE	8
NO SOURCE	3	GOOD	5	BOOKS/NEWSPAPERS/MAGAZINES	3	GOOD	7	WORD-OF-MOUTH	3	GOOD	4
RADIO	3			RADIO	1			TELEVISION	2		
LOCAL SHOPKEEPERS	1			WORD-OF-MOUTH	1			AGRI EXTENSION OFFICE	1		
WORD-OF-MOUTH	1			TELEVISION	0			LOCAL SHOPKEEPERS	1		
TELEVISION	0			LOCAL SHOPKEEPERS	0			RADIO	0		
OTHER	0			OTHER	0			OTHER	0		

Farmers in this area of the Cuddalore District, when questioned about the most common sources for information on farm-related topics, consistently replied with one of four responses: no source exists, information is obtained from agriextension offices, E.I.D. Parry provides information, and information is obtained from books, newspaper, or magazines. In four of the six categories listed in the chart above, the majority of farmers said they knew of no source for the specified information. In the remaining two categories, information came from the nearest agriextension office.²⁴ These results suggest that there is a great deal of potential for fully-developed Parry's Corner kiosks to meet real, existing needs in rural areas.

Very little data exists on actual internet users and usage in rural areas of India. Data that does exist focuses on urban areas and is prohibitively expensive to acquire. To improve its service, E.I.D. Parry should therefore institute an active program of profiling rural users and monitoring internet use. Each new user to a kiosk (to include kiosk operators) should be encouraged to complete a voluntary user profile—without individuals' names—with basic demographic information. Each user would then be given a login ID to input at the start of each session. Kiosks would locally track each customer's internet usage, recording sites visited and time spent at each. This information would be periodically uploaded from individual computers to a central database. (LSPs working in conjunction with n-Logue should be encouraged to set up similar

²⁴ More detailed information on villager needs and levels of satisfaction is included in the appendices.

systems that capture all users in the area, allowing E.I.D. Parry to ascertain whether needs of users of public kiosks differ substantially from those of private connections.) The goal would be the construction of a comprehensive database showing who is using computer and for what purposes. This first-of-its-kind rural usage database would be the proprietary property of E.I.D. Parry and, in addition to satisfying the company's informational needs, might have commercial value on the open market.²⁵

²⁵ A closely related issue that deserves note is content monitoring. Interviews with LSPs and cyber café operators in urban areas—confirmed by random checks of .history lists and caches in cafes—suggest that a substantial amount of internet time is spent looking for pornography. During initial visits to kiosks in Cuddalore in June 2001, researchers examined the .history lists and cache folders on kiosk computers. No sign of pornographic content was found. Three months later, multiple hits to pornographic sites were discovered on a substantial number of computers in the area. Given the conservative nature of rural Indian villages it seems reasonable to hypothesize a backlash again computers in villages should such usage become commonplace. In addition, accessing pornography—whether as individuals or in groups—marginalizes female users and discourages them from using kiosks. To avoid these potential problems, this study recommends E.I.D. Parry take the unilateral step of installing content restricting software on these kiosk computers.

Universal Access. Operator and user interviews show that kiosk use is limited almost exclusively to the family and friends of operators. Women make up a very small percentage of users. Lower castes are not represented at all. An excellent solution to this problem is to encourage women entrepreneurs who will not only advance their own social and economic well-being but also provide access to other rural women. A number of successful projects in India demonstrate that women's participation can raise villages' revenue generation opportunities through various types of e-commerce. Other projects show the benefits gained by encouraging rural women's groups to utilize e-mail discussion lists as a means of sharing information with other villages.²⁶ The needs of lower castes can be met through the design of a "time slot" program in which persons living in different areas of the village are given free slots of kiosk time under the supervision of trained operators. (E.I.D. Parry might have to subsidize this time and train and pay representatives from major caste groups in each village.) The Parry's Corner kiosk initiative must consider the information needs of women and lower castes, and include them in project planning, capacity-building, training, and monitoring and evaluation. To this end, operators should be required to regularly download and publish certain pieces of information that might be helpful to villagers. An excellent example is the M.S. Swaminathan Foundation work in Pondicherry, where operators download weather reports as RealAudio files that are played over speakers located in front of their information shops. The goal should be kiosk usage that shows representation from members in each of the diverse groups making up the overall village population, promoting civil society and a more democratic village structure.

In seeking to provide universal internet access to individuals in rural India, two main challenges arise over and over again: social position (wealth) and caste. Either of these issues can restrict access. Insufficient wealth prevents users from buying services. Caste denies them access to certain areas of villages. Making the situation even worse, the two variables are almost always linked with the lower caste individuals also being the poorest. The question thus arises: how can one overcome the economic and caste barriers to internet access that many villagers face?

For the E.I.D. Parry project, based on alliances with wealthy landowners who often place kiosks in private homes, this question is particularly difficult. Lower caste individuals are excluded both by their social standing and by their caste position. The result is an asymmetry of information and services that broadens the divide between rich and poor. Dr. V. P. Sharma, Head IT, National Institute of Agricultural Extension Management, Hyderabad, summarizes the situation when he

²⁶ Sood, Aditya Dev. *A Social Investor's Guide to ICTs for Development*. Bangalore: Center for Knowledge Societies, 2001.

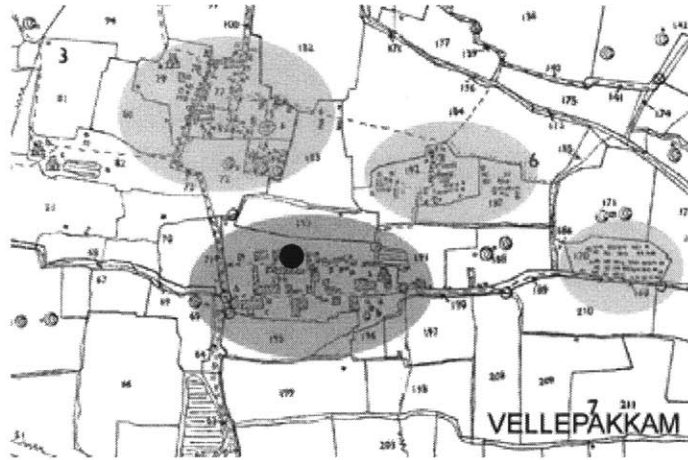
says, “I’ve seen village-level Internets in Dhar and Sikar, but the model here (in Nellikuppam) is very closed and extends only to a private circle.”

Having drawn these conclusions, this study hypothesizes that the kiosk to be located in KKV will be more successful in the long term—both as a financially independent kiosk and as a service provider to a wide segment of the village population. The KKV kiosk is located at the conjunction of three villages, along a major thoroughfare, in a commercial adjacency with surrounding advertisements, with a visually accessible interior that can be viewed from the road. (It is also the most commercial objectives of the kiosks with an operator making the investment in hopes of turning a profit and not out of some vague sense of paternalistic charity.) By this same logic, the Maligaimedu kiosk, located in the foyer of a private home alongside an existing post office and public call office will be more successful than that in Vellepakkam (a hypothesis substantiated by the greater variety and number of users that operator interviews presented above point out in Maligaimedu).

In order to overcome the service divide, Parry’s Corner kiosks should not be located in individual farmers’ homes. Private homes represent a psychological and physical barrier to access. Interviews show that most users are, at this time, friends and relatives of kiosk operators and that true, open access does not exist for poorer or lower caste individuals. Wealthier, private farmers have little economic or social incentive to encourage greater usage. Often, they have sufficient resources to buy their computers outright and do not require maximization of usage to guarantee profitability. In fact, universal access in the homes of these wealthier, higher caste individuals would undermine the very caste system that provides landless laborers for the harvesting of crops.

Interviews that physical and psychological factors such as those imposed by location of kiosks in private homes can significantly restrict access to kiosks. Four factors that can be notable barriers to accessibility are village location, surrounding uses, kiosk facades, and interior kiosk spaces each of which has a varying degree of impact on women, children, and lower caste individuals. The first of these, *village location*, can be illustrated with the plan for Vellepakkam. In this map, one sees that villages in the area typically consist of a main core (blue) that is surrounded by a series of lower caste colonies (light blue). Higher caste individuals from the core area rarely enter the colonies and, conversely, lower caste individuals rarely enter the core village. To do so is to risk both verbal abuse and physical assault. In the Vellepakkam case, the kiosk is located in the heart of the blue area (noted by the dark blue dot). This makes the kiosk inaccessible to villagers

living in the colonies.²⁷ In lower caste areas outside village cores, or “colonies,” the situation is worse. Here, an even larger number of households have, in their memory, never even seen a picture of a desktop computer . Many do not remember having heard the term “computer.” Fewer still have any real understanding of what a computer is or what services it can provide. Significantly, not one Dalit household interviewed—even when computer aware—had heard of Parry’s Corner kiosks or the IndiaAgriline portal.



Surrounding uses can be a second key barrier to kiosk access. Both the context and the type of building in which a kiosk is located can dissuade lower caste individuals from seeking service. The Paganda village kiosk (in the private home of a local farmer named Mr. Arunanchalam), when set aside a typical home in lower caste areas illustrates this point.

²⁷ Interviews with Public Call Office (PCO) operators in surrounding towns and villagers suggest that those locations that are spatially neutral sometimes undergo a sort of temporal sorting that allows them to service individuals from different castes in the same location. For example, a gradual understanding might evolve among community members in which upper caste members generally use the PCO during the day while lower castes use it in early morning or at night. The same sort of time division might also begin to appear in well-sited kiosks.



Typical village housing.



Paganda kiosk from the street.



Paganda kiosk front gate (from interior).

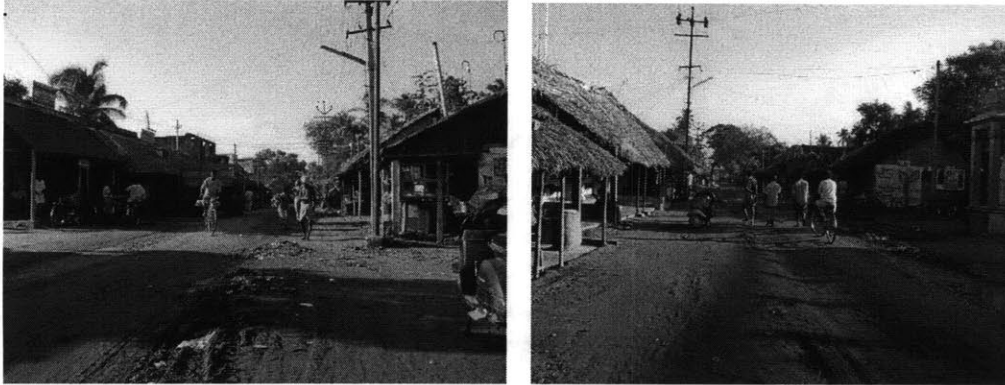
The obvious divide in wealth illustrated by these images combines with the private nature of the home as a building type to make the Paganda kiosk closed to lower castes.

Kiosk facades represent another barrier to kiosk use. In the Paganda images above, we see a gated home designed to prevent intrusion into the private garden and home of a wealthy individual. The addition of the small Parry's Corner sign in the corner of the image does little to override this impression. More typical signage of the sort found outside Public Call Offices and other shops would help mitigate this problem.

Finally, *kiosk interiors* can discourage entry by both women and lower castes. Interviews with urban cyber café operators and searches of .history lists and caches on their computers suggest a strong correlation between the privacy of individual users and pornography. Those individuals who can shield their screens from casual observers are much more likely to surf porn sites. The exclusion of pornography from kiosks is an important element in guaranteeing access to women. Women are less comfortable in cyber cafés they perceive as “seedy.” As the only source of internet access in villages, it is important that they not gain a reputation as being unacceptable for women. Kiosks should ideally be located in a comfortable, impersonalized space (that does not seem like the private workspace of a particular individual) that is visually accessible from the street. The interior should be clear of visual obstructions such as blinds or shutters that allow the user hide from public view.

A brief analysis of these four factors, village location, surrounding uses, kiosk façade, and kiosk interior suggests several guiding principles for the future development of kiosks: kiosks should be located in the interstitial spaces between core and colony areas (or perhaps on the edge of core areas along commonly traveled paths/roads); kiosks should be located in conjunction with

commercial or public spaces; kiosks should have open and inviting facades (often with extensive advertising aimed at drawing people inside) that enter directly onto the kiosk space (without the layering of space one sees with gates, parlors, etc.); and kiosks should have open interiors that discourage certain alienating uses.



Views to the right and left outside the KKV kiosk show a more psychologically accessible kiosk location. August 2001.



Façade of the Maligaimedu kiosk where villagers find an adjacent Public Call Office and post office. August 2001.

Finally, the distribution of useful, locally relevant information to entire villages can be facilitated by other existing media, broadening access to a more demographically representative segment of village populations. Parry's Corners should therefore be conceptualized as media kiosks and not internet kiosks. In household surveys and group interviews, villagers were asked to explain how they communicated with friends, family, relatives, employers, and public officials. The most common modes of communication are verbal messages from person to person, in-person meetings, in writing, by telephone, through local leaders, radio, posters and advertisements, newspapers and magazines, and television. As a general rule, villagers preferred non-written

forms of communication. The vast majority of outgoing messages were by work-of-mouth; incoming messages were by word-of-mouth, radio, and, when available, television. Many villagers, particularly in the lower caste areas, evinced obvious discomfort with communicating their ideas or receiving information in written form.²⁸ Telephones were used more frequently by wealthier villagers with, notably, no use among the poorest segments of the population. When queried about painted advertisements and billboards along the sides of houses, villagers almost universally responded with a strong positive reaction, clearly remembering particularly clever graphic advertisements (both commercial and political) even when no longer in place. The relationship between sender and receiver of messages seemed to play some role in the choice of mode of communication, however, the primary determinants of mode of communication were not the sender-receiver relationship but the content of the message and distance. Transactions between villagers and businesses or government offices outside the village were in writing; those internal to the village tended to be oral.

By linking more traditional media to knowledge obtained from the internet, villagers are better served. Inclusion of downloaded information in a weekly newsletter, at public meetings, or on the radio is a first step in this direction, linking the strengths of different media together to form a comprehensive information network. Furthermore, in spite of a stated company intention of supporting this type of broad and frequent use, kiosks remain underutilized. Interviews with kiosk operators suggest that most kiosks are actively used for only 2-5 hours each day. Lost usage time of approximately 10 hours a day represents a net loss of benefit to the village and a financial loss to the operator. The real money-earning potential for kiosks comes not from internet use but from associated services and technologies.

There is a strong statistical correlation between monthly phone use and computer awareness, with monthly phone users, though only 49.6% of the total surveyed population, representing 78.3% of the computer aware. Furthermore, all computer users are monthly phone users. These observations strengthen the argument that the two services will complement each other in the E.I.D. Parry kiosks, with each feeding off the other to create greater awareness and demand. In order to vitalize kiosks and increase their chances for financial success, E.I.D. Parry should

²⁸ This conclusion is based both on observation of individuals' mannerisms when questioned about written media in group and household interviews as well as the results of a written household survey tested in one village. To test the potential for use of written surveys to collect follow-up data, a twenty question short survey was distributed randomly to fifty houses in a test village prior to the study and collected two days later. The response rate was a respectable twenty percent. (The information collected, however, proved of little use as responses were rife with inconsistencies that suggested questions were not understood. A better designed survey might have some potential use as a way of profiling wealthier, more educated community members who happen to be the most likely users.) When asked why

emphasize the broad range of services that a kiosk can provide: telephone and internet access; e-mail; computer skills training; offline software applications such as word processing; educational games; printing; and the sale of downloaded information.²⁹ The goal should be kiosks that are in use by some segment of the village population at all times of the day. Seeking to maximize time use of computers will force operators to advertise the broader range of services they can provide.³⁰

they chose not to participate in surveys, villagers explained that they did not understand the questions or knew no literate individuals who could assist in its completion.

²⁹ Sales of downloaded information would not only increase services to villagers but also improve kiosk profitability. Whereas a single villager might not be able to afford the cost for internet time to access market prices, school test results, or the latest cricket scores on the internet, a dozen together can. Sale of this information on might be possible at rates lower than for buying a newspaper or catching a bus to the nearest town.

³⁰ Initial investigation suggests that it is these other services that will first make rural kiosks profitable and not actual web browsing. E-mail, for example, is the most widely used internet application in the worlds today. It makes distance and per minute costs of communication irrelevant while providing an electronic record of each transaction made. The low cost of transmitting multiple messages is so low that operators can charge for the offline computer time or data entry assistance rather than actual transmission.

Company Level Recommendations

Research and analysis three key actions that, if taken by E.I.D. Parry officials, have the potential to increase both the social impact and financial return of the IndiaAgriline project. First, a clear, *written social commitment to changing village society* should be endorsed by E.I.D. Parry officials at the highest levels. Second, E.I.D. Parry should create a clear incentive program rewarding operators who meet certain social goals with praise and financial incentives. Third, E.I.D. Parry should firmly *ally itself with other companies and organizations* with similar interests and objectives.

Commit to Change Village Society. In an effort to consciously mitigate the negative externalities identified earlier in this paper, E.I.D. Parry should consider endorsing a policy aimed at changing village society, empowering women and lower caste individuals. A formal commitment to a set of clear, achievable goals regarding usage and service levels for less empowered members of villages would provide additional direction to the IndiaAgriline project. It is important to note that such a commitment does not conflict with the goal of financial sustainability. Rather, it is a prerequisite for financial sustainability (defined as kiosks recouping initial investments and operating expenses). Only by expanding the customer base can kiosks operate without subsidies.

As part of this effort, E.I.D. Parry should require participating operators to agree to certain criteria before displaying the “Parry’s Corner” name. Seeing the Parry’s Corner sign should signal more than just the mechanical infrastructure to access the internet. Villagers should associate the label with a firm social commitment to improving village life. Kiosks should therefore be open certain hours of the day, guard equipment against vandalism or tampering, provide a certain level of assistance to those unfamiliar with computers, and provide access to women and lower castes.

Reward and Recognition Program. E.I.D. Parry should develop a recognition and rewards program to reward those operators who meet certain outreach goals. For example, operators might catalog the names of individuals visiting the kiosks over a one month period. In each of the following months, kiosk operators could be encouraged to bring an additional ten women or lower caste members to the kiosk. At least two of those new customers would be required to then working to bring ten new women or lower caste individuals to the kiosks each month. Operators who met these objectives (confirmed by random checks of those listed on the usage roster) would receive either bronze, silver, or gold status. Each might be given a certificate and have her name and photo published in local papers. Perhaps those performing exceptionally well might also be

given a premier member status that allows them to access special information, services, or discounts on the IndiaAgriline website.

Establish Partnerships. A common thread running through much of the documentation reviewed for this report is the importance of intersectoral collaboration. The high costs of implementing a project like IndiaAgriline in rural areas discourages independent action. E.I.D. Parry should therefore make concerted effort to ally itself with other parties interested in providing services and motivating change in villages, to include private sector entrepreneurs, educational institutes, government officials, community groups, and non-governmental organizations.³¹ Of particular importance are links to community organizations that can help introduce internet service in communities and provide a lasting contact for growing the Parry's Corner kiosk network.

³¹ A number of documents are available which outline the partnership process, both in terms of the general steps needed to create effective partnerships (Chanya et al., 1998), as well as specific steps to creating partnerships and developing locally-based ICT applications (Richardson and McConnell, 2000; Leland Initiative, 1999).

CONCLUSION

On one bus from Cuddalore to Nellikuppam, I found a rather unusual altar beside the driver. It contained beads, flowers, and small statues of the Hindu gods Ganesh, Saraswathi, and Lakshmi. It is not these items that make it unusual, however, altars of this type are common. What sets this altar apart is the small round disk floating above it—a compact disk suspended by a string from the ceiling.

When I asked about the disk, the driver explained, “It is technology. I keep it there to remind me that this is the way forward. It is this that will make lives better.” He went on to explain that the disk represents progress, and that that progress must be respected and acknowledged in the same way as Ganesh, Saraswathi, and Lakshmi.



While certainly not a deification of high tech, this disk does symbolize a sentiment that has entered into Indian hearts from the most powerful business person to a hardworking bus driver in Tamil Nadu: that high tech offers much hope for the future. And this analysis suggests that the situation may not be as bleak as is sometimes imagined.

Evidence to support the existence of a digital divide in this area of the Cuddalore District is somewhat mixed. An intense survey of rural households demonstrates that in one rural area of the Cuddalore District of Tamil Nadu, use of computers and the internet is demographically representative. Though only one-quarter of rural villagers in these areas are computer aware and an even smaller 7% actually use computers, it is encouraging that the body of actual users is demographically diverse across key variables such as gender, wealth, education, and age. At least on this one point, traditional arguments about a digital divide are refuted. Those individuals who have entered into the range of computer users are a diverse group representing many areas of society.

Recognition of the progressive nature of actual computer use, however, does not allow us to neglect the tremendous digital divide that does exist between the computer aware and non-aware and users and non-users. We must not overlook the fact that almost three-quarters of villagers in

this area of the Cuddalore District are not computer aware and that 93% have never used a computer.

This report focuses on the E.I.D. Parry internet kiosk network being constructed in the Cuddalore District of Tamil Nadu. It documents the beginning stages of the project, describing its objectives, evolution and implementation; describes three villages in the Cuddalore District in a way that allows for a thorough future assessment of impacts; analyzes the model's potential for success by discussing computer awareness levels, user skill levels, and other key variables in the equation defining financial and social success; and hypothesizes ways of improving the Parry's Corner network to increase its financial and social returns while eliminating some negative externalities.

The E.I.D. Parry kiosk network, from the public perspective, has the potential to be a sound means of providing rural telecom service. Infrastructure and content development costs are borne by the private sector, conserving precious public resources. Risk and cost of initial investment are diversified across a collection of society's wealthier members, reducing the potentially negative impacts associated with failure. Furthermore, in order to diversify both risk and cost, E.I.D. Parry is pushing its backbone infrastructure and IndiaAgriline website to evolve. The company wants private home users to tap into the LSP service required for the village connections and wants local entrepreneurs to expand on its IndiaAgriline content. In this way, the company hopes to achieve the critical mass of users that will guarantee financial profitability and make its network of kiosks grow.

More services provided to more people means more social benefit to the villages, allowing E.I.D. Parry to receive credit not only for the success of its investment (if everything works out) but also for the social benefits its network provides. It is a chicken-and-egg question to ask whether a company takes action to improve social welfare or whether it works to improve to reinforce its image as a socially responsible partner in communities. Whichever motivation is greater, the result is the same: a telecom infrastructure and new internet content in previously unserved areas.

The E.I.D. Parry project, while succeeding in its goals to provide an infrastructure for rural internet service and a seemingly feasible plan for developing profitable service points, does not successfully address its goal of providing broad access. The existing E.I.D. Parry network does not tackle the problem of the real digital divide in which the vast majority of villagers have no knowledge of computers. It, more importantly, fails to be demographically representative in the way that general computer awareness and use are in the region as a whole. Though E.I.D. Parry has demonstrated the ability to provide an infrastructure for rural internet service and a strong

potential for developing a profitable kiosk network, it has not yet overcome the challenge of providing broad, demographically-representative access that includes women and lower castes.

Research suggests a series of moves at the village and company levels may improve both the financial return and social impact of the E.I.D. Parry kiosk network. At the *village level*, efforts should focus on enhancing computer awareness levels, developing computer skills among a broad range of the village population; profiling users to improve services and direct investment; and providing universal access to all members of the community—particularly women and lower caste individuals. At the *company level*, E.I.D. Parry should work to create a clear social policy with quantifiable, achievable social goals; institute an incentive program that rewards operators for meeting social objectives; and formulate a strong network of multisectoral alliances.

In the end, it is only through the study of field models such as that in utilization by E.I.D. Parry—models with real actors and real, rural unconnected communities—that we can begin to understand how the internet is being introduced to rural India. Equally important, is the treasure trove of information that such projects offer to aid in the creation of other, similar projects in other areas. By comparison of existing models for internet provision, we begin to learn the lessons that lead toward the ultimate goal of sustainable replicability. In discovering and understanding the impacts of connectivity kiosks on rural communities that lack such technology, policy makers, researchers, development organizations, and entrepreneurs can work together to find a way to service those who, for the time being, remain the unconnected.

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APPENDIX A

HOUSEHOLD SURVEY QUESTIONS

SURVEY IDENTIFICATION

FIELD NUMBER

VILLAGE NAME

HAMLET NAME

HOUSEHOLD ADDRESS

INTERVIEWER

QUESTIONNAIRE NUMBER

STARTING WEATHER CONDITION

DATE OF INTERVIEW

START TIME OF INTERVIEW

END TIME OF INTERVIEW

NOTE LOCATION OF SURVEYED HOUSE ON VILLAGE MAP (DATA RECORDS NOT SUFFICIENT FOR SPATIAL COMPONENT TO STUDY)

EXPLAIN PURPOSE OF SURVEY

EXPLAIN THE CONFIDENTIALITY OF SURVEY DATA

HOUSE CONDITION (OBSERVED)

PREDOMINANT MATERIAL OF THE FLOOR OF THE SURVEYED HOUSE (MUD=1, WOOD/BAMBOO=2, BRICK=3, STONE=4, CEMENT=5, MOSAIC/FLOOR TILES=6, OTHER=7)

PREDOMINANT MATERIAL OF THE WALL OF THE SURVEYED HOUSE (GRASS/THATCH/BAMBOO=1, PLASTIC/POLYETHYLENE=2, MUD/UNBURNT BRICK=3, WOOD=4, METAL/ASBESTOS SHEETS=5, BURNT BRICK=6, STONE=7, CONCRETE =8, ANY OTHER=9)

PREDOMINANT MATERIAL OF THE ROOF OF THE SURVEYED HOUSE (GRASS/THATCH/BAMBOO/WOOD/MUD=1, PLASTIC/POLYETHYLENE=2, TILES=3, SLATE=4, METAL/ASBESTOS SHEETS=5, BRICK=6, STONE=7, CONCRETE=8, ANY OTHER=9)

CONDITION OF THIS SURVEYED HOUSE (GOOD=1, LIVABLE=2, DILAPIDATED=3)

HOUSEHOLD MEMBER PROFILES (ALL HOUSEHOLD MEMBERS)

NAME

AGE

GENDER

RELATION TO HEAD OF HOUSEHOLD

MARITAL STATUS (M, DIV, SEP, SIN)

EDUCATION LEVEL (N, P, S, B, G)

TAMIL (SRW)

ENGLISH (SRW)

HOUSEHOLD GENERAL PROFILE

QUESTION ON SCHEDULED CASTE/TRIBE OMITTED

WHAT IS THE PREDOMINANT RELIGION IN THIS HOUSEHOLD?

WHERE WAS THE HEAD OF THIS HOUSEHOLD BORN? (THIS VILLAGE=1, NEARBY VILLAGE=2, DISTANT VILLAGE=3, NEARBY URBAN AREA=4, DISTANT URBAN AREA=5, UNKNOWN=9)

WHERE WAS THE HEAD OF THIS HOUSEHOLD'S SPOUSE BORN? (THIS VILLAGE=1, NEARBY VILLAGE=2, DISTANT VILLAGE=3, NEARBY URBAN AREA=4, DISTANT URBAN AREA=5, UNKNOWN=9)

HOW MANY YEARS HAS THE HEAD OF HOUSEHOLD LIVED IN THIS VILLAGE?

HOW MANY YEARS HAS THE HEAD OF HOUSEHOLD LIVED IN THIS HOUSE?

HOUSE OWNERSHIP

OWNERSHIP STATUS OF THE HOUSE (OWNED=1, RENTED=2, OTHER=3)

IF OWNED, HOW MUCH DID YOU SPEND BUILDING/BUYING YOUR HOUSE (RP)?

IF RENTED HOW MUCH DO YOU SPEND EACH MONTH ON RENT (RP)?

HOUSE CONDITION AND AMENITIES (RESPONSE)

AGE OF SURVEYED HOUSE IN YEARS?

NUMBER OF DWELLING ROOMS IN THIS HOUSEHOLD?

SOURCE OF LIGHTING (ELECTRICITY=1, KEROSENE=2, SOLAR=3, OTHER OIL=4, ANY OTHER=5, NO LIGHTING=6)
DRINKING WATER SOURCE (TAP=1, HANDPUMP=2, MOTORIZED PUMP=3, OPEN WELL=4, TANK/POND/LAKE=5, RIVER/SPRING/CANAL=6, OTHER=7)

DRINKING WATER PROXIMITY (WITHIN PREMISES=1, NEAR PREMISES=2, AWAY=3)

BATHROOM WITHIN HOUSE (Y/N)

RADIO/TRANSISTOR (Y/N)

COMPUTER (Y/N)

BICYCLE (Y/N)

CAR/JEEP/VAN (Y/N)

KITCHEN WITHIN THE HOUSE (Y/N)

TELEVISION (Y/N)

TELEPHONE (Y/N)

SCOOTER/MOTORCYCLE/MOPED (Y/N)

MOTORIZED FARM EQUIPMENT (TRACTOR, ETC.) (Y/N)

INCOME AND EXPENDITURES

PLEASE TELL ME, GENERALLY, WHAT IS YOUR TOTAL MONTHLY HOUSEHOLD INCOME (RP)

DO YOU RECEIVE ANY MONTY FROM FAMILY OR FRIENDS OUTSIDE THE HOUSEHOLD?

IF SO, HOW MUCH, ON AVERAGE, PER MONTH?

FROM WHOM DOES THIS REMITTANCE COME?

FROM WHERE? (NOTE THAT THE MAJORITY OF REMITTANCES CAME FROM LOCAL AREA CITIES <20 KM)

IN THE LAST WEEK HOW MUCH AS THIS HOUSEHOLD SPENT ON FOOD?

FOOD (NORMAL WEEK)?

IN THE LAST WEEK HOW MUCH AS THIS HOUSEHOLD SPENT ON TRANSPORTATION?

TRANSPORTATION (NORMAL WEEK)?

IN THE LAST WEEK HOW MUCH AS THIS HOUSEHOLD SPENT ON COMMUNICATION?

COMMUNICATION (NORMAL WEEK)?

IN THE LAST WEEK HOW MUCH AS THIS HOUSEHOLD SPENT ON ENTERTAINMENT?

ENTERTAINMENT (NORMAL WEEK)?

IN WHICH GROUP WOULD YOU PLACE YOUR HOUSEHOLD? (VERY POOR=1, POOR=2, MIDDLE=3, MORE THAN MIDDLE=4, HIGH INCOME=5)

EMPLOYMENT (INDIVIDUAL HOUSEHOLD MEMBERS)

EMPLOYMENT STATUS (FULL-TIME=1, PART-TIME=2, SEASONAL WORKER=3, UNEMPLOYED=4, RETIRED=5, HANDICAPPED=6, HOMEMAKER=7, STUDENT=7)

JOB TYPE (BUSINESS OWNER=1, FARMER=2, AGRICULTURAL LABORER=3, GOVERNMENT EMPLOYEE=4, TEACHER=5, EID PARRY EMPLOYEE=6, SELF-EMPLOYED SERVICES=7, STORE CLERK/SECRETARY=8, COMPUTER-RELATED JOB=9, PROFESSIONAL (DOCTOR, LAWYER, ENGINEER)=10, OTHER=11 (DESCRIBE))

JOB LOCATION (VILLAGE=1, NEARBY VILLAGE=2, NELLIKUPPAM=3, CUDDALORE=4, PANRUTI=5, MORE THAN 60 KM DISTANCE=6)

DAILY WAGE

HOURS/DAY

DAYS/WEEK

MONTH/ (MONSOON)

EID PARRY EMPLOYEE

WORKS INDIRECTLY FOR EID PARRY

JOB TYPE (BUSINESS OWNER=1, FARMER=2, AGRICULTURAL LABORER=3, GOVERNMENT EMPLOYEE=4, TEACHER=5, EID PARRY EMPLOYEE=6, SELF-EMPLOYED SERVICES=7, STORE CLERK/SECRETARY=8, COMPUTER-RELATED JOB=9, PROFESSIONAL (DOCTOR, LAWYER, ENGINEER)=10, OTHER=11 (DESCRIBE))

AGRICULTURAL/LAND USE PROFILE (FARMERS)

WHICH BEST DESCRIBES THIS LAND? (PRIVATE HOUSEHOLD PLOT=1, RENTED PROPERTY=2, UNCLAIMED/UNOWNED PROPERTY=3, OTHER=4)

HOW DO YOU PAY FOR FARMING INPUTS LIKE FERTILIZER AND SEED? (USE HOUSEHOLD FUNDS=1, PAY ON CREDIT/WITH LOANS=2, EXCHANGE OF CROP=3, PROVIDE A SERVICE=4, SOMETHING ELSE=5, DO NOT PAY=6, OTHER=7)

HOW DO YOU CULTIVATE AND HARVEST THIS LAND? (COMMUNAL EFFORT=1, HIRED LABORERS=2, RELATIVES=3, HOUSEHOLD LABOR=4, MECHANICAL FARMING EQUIPMENT=5, OTHER=6)

DO YOU HAVE DIFFICULTY FINDING LABOR TO CULTIVATE AND HARVEST CROPS?

HOW MUCH WOULD YOU BE WILLING TO PAY FOR BETTER INFORMATION ON FARMING TECHNIQUES?

HOW MUCH WOULD YOU BE WILLING TO PAY FOR UP-TO-DATE INFORMATION ON CROP PRICES?

LAST YEAR HOW MUCH PADDY DID YOU GROW (KG)? TO WHOM WAS THE PADDY SOLD? (HOUSEHOLD USE ONLY=1, EID PARRY=2, MIDDLEMAN=3, DIRECT SALE TO CONSUMERS=4, OTHER=5) AT ABOUT WHAT PRICE WAS THE PADDY SOLD (RP/KG)?

LAST YEAR HOW MUCH SUGAR CANE DID YOU GROW (KG)? TO WHOM WAS THE SUGAR CANE SOLD? (HOUSEHOLD USE ONLY=1, EID PARRY=2, MIDDLEMAN=3, DIRECT SALE TO CONSUMERS=4, OTHER=5) AT ABOUT WHAT PRICE WAS THE SUGAR CANE SOLD (RP/KG)?

LAST YEAR HOW MUCH TAPIOCA DID YOU GROW (KG)? TO WHOM WAS THE TAPIOCA SOLD? (HOUSEHOLD USE ONLY=1, EID PARRY=2, MIDDLEMAN=3, DIRECT SALE TO CONSUMERS=4, OTHER=5) AT ABOUT WHAT PRICE WAS THE TAPIOCA SOLD (RP/KG)?

LAST YEAR HOW MUCH GROUNDNUT DID YOU GROW (KG)? TO WHOM WAS THE GROUNDNUT SOLD? (HOUSEHOLD USE ONLY=1, EID PARRY=2, MIDDLEMAN=3, DIRECT SALE TO CONSUMERS=4, OTHER=5) AT ABOUT WHAT PRICE WAS THE GROUNDNUT SOLD (RP/KG)?

LAST YEAR HOW MUCH BANANA DID YOU GROW (KG)? TO WHOM WAS THE BANANA SOLD? (HOUSEHOLD USE ONLY=1, EID PARRY=2, MIDDLEMAN=3, DIRECT SALE TO CONSUMERS=4, OTHER=5) AT ABOUT WHAT PRICE WAS THE BANANA SOLD (RP/KG)?

LAST YEAR HOW MUCH COCONUT DID YOU GROW (KG) TO WHOM WAS THE COCONUT SOLD? (HOUSEHOLD USE ONLY=1, EID PARRY=2, MIDDLEMAN=3, DIRECT SALE TO CONSUMERS=4, OTHER=5) AT ABOUT WHAT PRICE WAS THE COCONUT SOLD (RP/KG)?

LAST YEAR HOW MUCH OTHER CROP DID YOU GROW (KG)? TO WHOM WAS THE OTHER CROP SOLD? (HOUSEHOLD USE ONLY=1, EID PARRY=2, MIDDLEMAN=3, DIRECT SALE TO CONSUMERS=4, OTHER=5) AT ABOUT WHAT PRICE WAS THE OTHER CROP SOLD (RP/KG)?

LAST YEAR HOW MUCH OTHER CROP DID YOU GROW (KG)? TO WHOM WAS THE OTHER CROP SOLD? (HOUSEHOLD USE ONLY=1, EID PARRY=2, MIDDLEMAN=3, DIRECT SALE TO CONSUMERS=4, OTHER=5) AT ABOUT WHAT PRICE WAS THE OTHER CROP SOLD (RP/KG)?

INFORMATION NEEDS ASSESSMENT (AGRICULTURE)

NAME THE THREE MOST USEFUL PIECES OF THE TYPES OF INFORMATION LISTED BELOW (CURRENT WEATHER REPORTS) PRIMARY SOURCE (NO SOURCE=1, AGRICULTURAL EXTENSION OFFICE=2, EID PARRY=3, BOOKS/NEWSPAPERS/MAGAZINES=4, RADIO=5, TELEVISION=6, LOCAL SHOPKEEPERS=7, WORD-OF-MOUTH=8, OTHER=9) RELIABILITY OF EXISTING INFORMATION (VERY BAD 1, 2, 3, 4, 5, VERY GOOD)

NAME THE THREE MOST USEFUL PIECES OF THE TYPES OF INFORMATION LISTED BELOW (INFORMATION ON PLANT DISEASES) PRIMARY SOURCE (NO SOURCE=1, AGRICULTURAL EXTENSION OFFICE=2, EID PARRY=3, BOOKS/NEWSPAPERS/MAGAZINES=4, RADIO=5, TELEVISION=6, LOCAL SHOPKEEPERS=7, WORD-OF-MOUTH=8, OTHER=9) RELIABILITY OF EXISTING INFORMATION (VERY BAD 1, 2, 3, 4, 5, VERY GOOD)

NAME THE THREE MOST USEFUL PIECES OF THE TYPES OF INFORMATION LISTED BELOW (INFORMATION ON PEST CONTROL) PRIMARY SOURCE (NO SOURCE=1, AGRICULTURAL EXTENSION OFFICE=2, EID PARRY=3, BOOKS/NEWSPAPERS/MAGAZINES=4, RADIO=5, TELEVISION=6, LOCAL SHOPKEEPERS=7, WORD-OF-MOUTH=8, OTHER=9) RELIABILITY OF EXISTING INFORMATION (VERY BAD 1, 2, 3, 4, 5, VERY GOOD)

NAME THE THREE MOST USEFUL PIECES OF THE TYPES OF INFORMATION LISTED BELOW (INFORMATION ON MARKET PRICES) PRIMARY SOURCE (NO SOURCE=1, AGRICULTURAL EXTENSION OFFICE=2, EID PARRY=3, BOOKS/NEWSPAPERS/MAGAZINES=4, RADIO=5, TELEVISION=6, LOCAL SHOPKEEPERS=7, WORD-OF-MOUTH=8, OTHER=9) RELIABILITY OF EXISTING INFORMATION (VERY BAD 1, 2, 3, 4, 5, VERY GOOD)

NAME THE THREE MOST USEFUL PIECES OF THE TYPES OF INFORMATION LISTED BELOW (INFORMATION ON NEW FARMING PRODUCTS) PRIMARY SOURCE (NO SOURCE=1, AGRICULTURAL EXTENSION OFFICE=2, EID PARRY=3, BOOKS/NEWSPAPERS/MAGAZINES=4, RADIO=5, TELEVISION=6, LOCAL SHOPKEEPERS=7, WORD-OF-MOUTH=8, OTHER=9) RELIABILITY OF EXISTING INFORMATION (VERY BAD 1, 2, 3, 4, 5, VERY GOOD)

NAME THE THREE MOST USEFUL PIECES OF THE TYPES OF INFORMATION LISTED BELOW (INFORMATION ON AVAILABILITY OF FARMING SUPPLIES) PRIMARY SOURCE (NO SOURCE=1, AGRICULTURAL EXTENSION OFFICE=2, EID PARRY=3, BOOKS/NEWSPAPERS/MAGAZINES=4, RADIO=5, TELEVISION=6, LOCAL SHOPKEEPERS=7, WORD-OF-MOUTH=8, OTHER=9) RELIABILITY OF EXISTING INFORMATION (VERY BAD 1, 2, 3, 4, 5, VERY GOOD)

NAME THE THREE MOST USEFUL PIECES OF THE TYPES OF INFORMATION LISTED BELOW (LIST OF AVAILABLE AGRICULTURAL JOBS) PRIMARY SOURCE (NO SOURCE=1, AGRICULTURAL EXTENSION OFFICE=2, EID PARRY=3, BOOKS/NEWSPAPERS/MAGAZINES=4, RADIO=5, TELEVISION=6, LOCAL SHOPKEEPERS=7, WORD-OF-MOUTH=8, OTHER=9) RELIABILITY OF EXISTING INFORMATION (VERY BAD 1, 2, 3, 4, 5, VERY GOOD)

NAME THE THREE MOST USEFUL PIECES OF THE TYPES OF INFORMATION LISTED BELOW (LIST OF THOSE SEEKING AGRICULTURAL JOBS) PRIMARY SOURCE (NO SOURCE=1, AGRICULTURAL EXTENSION OFFICE=2, EID PARRY=3, BOOKS/NEWSPAPERS/MAGAZINES=4, RADIO=5, TELEVISION=6, LOCAL SHOPKEEPERS=7, WORD-OF-MOUTH=8, OTHER=9) RELIABILITY OF EXISTING INFORMATION (VERY BAD 1, 2, 3, 4, 5, VERY GOOD)

NAME THE THREE MOST USEFUL PIECES OF THE TYPES OF INFORMATION LISTED BELOW (INFORMATION FROM AGRI EXTENSION OFFICE) PRIMARY SOURCE (NO SOURCE=1, AGRICULTURAL EXTENSION OFFICE=2, EID PARRY=3, BOOKS/NEWSPAPERS/MAGAZINES=4, RADIO=5, TELEVISION=6, LOCAL SHOPKEEPERS=7, WORD-OF-MOUTH=8, OTHER=9) RELIABILITY OF EXISTING INFORMATION (VERY BAD 1, 2, 3, 4, 5, VERY GOOD)

COMMUNITY INVOLVEMENT

HOW OFTEN DO YOU ATTEND FAMILY FESTIVITIES AND CEREMONIES? VILLAGE FESTIVITIES AND CEREMONIES? (NEVER=1, SOMETIMES=2, OFTEN=3) HOW OFTEN DOES A HOUSEHOLD MEMBER ATTEND VILLAGE MEETINGS? (NEVER=1, SOMETIMES=2, OFTEN=3) WHO ATTENDS? USE NUMBER OF HOUSEHOLD MEMBER FROM DEMOGRAPHICS SECTION.

QUESTION OMITTED IN LIEU OF CHARITABLE ORGANIZATION/CLUB MEMBERSHIP LISTS. (NOT OBTAINED DURING FIELD DATA COLLECTION AND THEREFORE OMITTED)

IS YOUR HOUSEHOLD MORE OR LESS INVOLVED IN VILLAGE ACTIVITIES THAN IN 1999? (LESS=1, SAME=2, MORE=3)

SERVICE ASSESSMENT

HOW WOULD YOU ASSESS THE QUALITY OF THE FOLLOWING SERVICES IN YOUR VILLAGE? (VERY BAD 1, 2, 3, 4, 5 VERY GOOD)

SOCIAL SERVICES. BETTER OR WORSE OVER THE PAST YEAR? (BETTER)

TRANSPORTATION SERVICES. HOW WOULD YOU ASSESS THE QUALITY OF THE FOLLOWING SERVICES IN YOUR VILLAGE? (VERY BAD 1, 2, 3, 4, 5 VERY GOOD)

TRANSPORTATION SERVICES. BETTER OR WORSE OVER THE PAST YEAR? (BETTER)

COMMUNICATION SERVICES. HOW WOULD YOU ASSESS THE QUALITY OF THE FOLLOWING SERVICES IN YOUR VILLAGE? (VERY BAD 1, 2, 3, 4, 5 VERY GOOD)

COMMUNICATION SERVICES. BETTER OR WORSE OVER THE PAST YEAR? (BETTER)

BANKING SERVICES. HOW WOULD YOU ASSESS THE QUALITY OF THE FOLLOWING SERVICES IN YOUR VILLAGE? (VERY BAD 1, 2, 3, 4, 5 VERY GOOD)

BANKING SERVICES. BETTER OR WORSE OVER THE PAST YEAR? (BETTER)

LEGAL SERVICES. HOW WOULD YOU ASSESS THE QUALITY OF THE FOLLOWING SERVICES IN YOUR VILLAGE? (VERY BAD 1, 2, 3, 4, 5 VERY GOOD)

LEGAL SERVICES. BETTER OR WORSE OVER THE PAST YEAR? (WORSE)

MEDICAL SERVICES. HOW WOULD YOU ASSESS THE QUALITY OF THE FOLLOWING SERVICES IN YOUR VILLAGE? (VERY BAD 1, 2, 3, 4, 5 VERY GOOD)

MEDICAL SERVICES. BETTER OR WORSE OVER THE PAST YEAR? (BETTER)

AMBULANCE SERVICES. HOW WOULD YOU ASSESS THE QUALITY OF THE FOLLOWING SERVICES IN YOUR VILLAGE? (VERY BAD 1, 2, 3, 4, 5 VERY GOOD)

AMBULANCE SERVICES. BETTER OR WORSE OVER THE PAST YEAR? (WORSE)

SCHOOLS. HOW WOULD YOU ASSESS THE QUALITY OF THE FOLLOWING SERVICES IN YOUR VILLAGE? (VERY BAD 1, 2, 3, 4, 5 VERY GOOD)

SCHOOLS. BETTER OR WORSE OVER THE PAST YEAR? (BETTER)

CULTURAL SERVICES. HOW WOULD YOU ASSESS THE QUALITY OF THE FOLLOWING SERVICES IN YOUR VILLAGE? (VERY BAD 1, 2, 3, 4, 5 VERY GOOD)

CULTURAL SERVICES. BETTER OR WORSE OVER THE PAST YEAR? (BETTER)

ELDERLY/DISABLED SERVICES. HOW WOULD YOU ASSESS THE QUALITY OF THE FOLLOWING SERVICES IN YOUR VILLAGE? (VERY BAD 1, 2, 3, 4, 5 VERY GOOD)	ACCESS TO INFORMATION ON AVAILABILITY OF FARMING SUPPLIES. BETTER/WORSE THAN 1999.
ELDERLY/DISABLED SERVICES. BETTER OR WORSE OVER THE PAST YEAR? (WORSE)	ACCESS TO INFORMATION ON AVAILABILITY OF FARMING SUPPLIES. WOULD YOU PAY 10 RP FOR IMPROVED SERVICES?
GOVERNMENT SERVICES. HOW WOULD YOU ASSESS THE QUALITY OF THE FOLLOWING SERVICES IN YOUR VILLAGE? (VERY BAD 1, 2, 3, 4, 5 VERY GOOD)	SPEED OF MESSAGES TO FRIENDS/RELATIVES. (VERY UNSATISFIED 1, 2, 3, 4, 5 VERY SATISFIED)
GOVERNMENT SERVICES. BETTER OR WORSE OVER THE PAST YEAR? (WORSE)	SPEED OF MESSAGES TO FRIENDS/RELATIVES. BETTER/WORSE THAN 1999.
AGRICULTURAL INFORMATION. HOW WOULD YOU ASSESS THE QUALITY OF THE FOLLOWING SERVICES IN YOUR VILLAGE? (VERY BAD 1, 2, 3, 4, 5 VERY GOOD)	SPEED OF MESSAGES TO FRIENDS/RELATIVES. WOULD YOU PAY 10 RP FOR IMPROVED SERVICES?
AGRICULTURAL INFORMATION. BETTER OR WORSE OVER THE PAST YEAR? (BETTER)	COST OF MESSAGES SENT TO FRIENDS/RELATIVES. (VERY UNSATISFIED 1, 2, 3, 4, 5 VERY SATISFIED)
ACCESS TO INFORMATION	COST OF MESSAGES SENT TO FRIENDS/RELATIVES. BETTER/WORSE THAN 1999.
ARE YOU AWARE THAT THERE ARE SPECIAL GOVERNMENT PROGRAMS THAT PROVIDE BENEFITS TO THE RURAL POOR?	COST OF MESSAGES SENT TO FRIENDS/RELATIVES. WOULD YOU PAY 10 RP FOR IMPROVED SERVICES?
HOW MANY TIMES PER YEAR ARE YOU VISITED BY A GOVERNMENT OFFICIAL?	ACCESS TO EDUCATIONAL PROGRAMS/TRAINING SCHOOLS. (VERY UNSATISFIED 1, 2, 3, 4, 5 VERY SATISFIED)
IMAGINE THE IDEAL VILLAGE FOR YOUR HOUSEHOLD. WHERE WOULD YOU RANK THIS VILLAGE? (WORST 1, 2, 3, 4, 5 BEST)	ACCESS TO EDUCATIONAL PROGRAMS/TRAINING SCHOOLS. BETTER/WORSE THAN 1999.
GENERAL INFORMATION ACCESS	ACCESS TO EDUCATIONAL PROGRAMS/TRAINING SCHOOLS. WOULD YOU PAY 10 RP FOR IMPROVED SERVICES?
ACCESS TO INFORMATION ON FARMING TECHNIQUES/PRACTICES. (VERY UNSATISFIED 1, 2, 3, 4, 5 VERY SATISFIED)	ACCESS TO INFORMATION ON POLITICS, SPORTS, AND MOVIES. (VERY UNSATISFIED 1, 2, 3, 4, 5 VERY SATISFIED)
ACCESS TO INFORMATION ON FARMING TECHNIQUES/PRACTICES. BETTER/WORSE THAN 1999.	ACCESS TO INFORMATION ON POLITICS, SPORTS, AND MOVIES. BETTER/WORSE THAN 1999.
ACCESS TO INFORMATION ON FARMING TECHNIQUES/PRACTICES? WOULD YOU PAY 10 RP FOR IMPROVED SERVICES?	ACCESS TO INFORMATION ON POLITICS, SPORTS, AND MOVIES. WOULD YOU PAY 10 RP FOR IMPROVED SERVICES?
ACCESS TO INFORMATION ON MARKET PRICES FOR CROPS. (VERY UNSATISFIED 1, 2, 3, 4, 5 VERY SATISFIED)	ACCESS TO GOVERNMENT SERVICES AND DOCUMENTS. (VERY UNSATISFIED 1, 2, 3, 4, 5 VERY SATISFIED)
ACCESS TO INFORMATION ON MARKET PRICES FOR CROPS. BETTER/WORSE THAN 1999.	ACCESS TO GOVERNMENT SERVICES AND DOCUMENTS. BETTER/WORSE THAN 1999.
ACCESS TO INFORMATION ON MARKET PRICES FOR CROPS.	ACCESS TO GOVERNMENT SERVICES AND DOCUMENTS. WOULD YOU PAY 10 RP FOR IMPROVED SERVICES?
ACCESS TO INFORMATION ON MARKET PRICES FOR CROPS. WOULD YOU PAY 10 RP FOR IMPROVED SERVICES?	ACCESS TO MATRIMONIALS. (VERY UNSATISFIED 1, 2, 3, 4, 5 VERY SATISFIED)
ACCESS TO INFORMATION ON AVAILABILITY OF FARMING SUPPLIES. (VERY UNSATISFIED 1, 2, 3, 4, 5 VERY SATISFIED)	ACCESS TO MATRIMONIALS. BETTER/WORSE THAN 1999.
	ACCESS TO MATRIMONIALS. WOULD YOU PAY 10 RP FOR IMPROVED SERVICES?
	ACCESS TO EXPERIENCED MEDICAL PROFESSIONS. (VERY UNSATISFIED 1, 2, 3, 4, 5 VERY SATISFIED)

ACCESS TO EXPERIENCED MEDICAL PROFESSIONS. BETTER/WORSE THAN 1999.

ACCESS TO EXPERIENCED MEDICAL PROFESSIONS. WOULD YOU PAY 10 RP FOR IMPROVED SERVICES?

ACCESS TO COMPUTERS FOR LEARNING. (VERY UNSATISFIED 1, 2, 3, 4, 5 VERY SATISFIED)

ACCESS TO COMPUTERS FOR LEARNING. BETTER/WORSE THAN 1999.

ACCESS TO COMPUTERS FOR LEARN2I2G. WOULD YOU PA1 10 RP FOR IMPROVED SERVICES?

TELEPHONE USE

NON-REGULAR PHONE USERS. DO HOUSEHOLD MEMBERS REGULARLY (AT LEAST ONCE A MONTH) USE A TELEPHONE? DOES NOT KNOW HOW TO USE A TELEPHONE: SKIP TO QUESTION H19

NON-REGULAR PHONE USERS. IF NO, WHY DO YOU NOT USE A TELEPHONE MORE OFTEN? (TELEPHONE TOO FAR AWAY, TELEPHONE TOO EXPENSIVE, TELEPHONE UNRELIABLE/BROKEN, WAIT TIME TOO LONG, NOBODY TO CALL, DO NOT KNOW HOW TO USE, OTHER)

NON-REGULAR PHONE USERS. WHO USES THE PHONE MORE, MEN OR WOMEN? (MEN, WOMEN, EQUAL BETWEEN MEN AND WOMEN, NO ONE USES TELEPHONE)

NON-REGULAR PHONE USERS. IF THE HOUSEHOLD DID USE A PHONE, WHAT WOULD BE YOUR MAIN PURPOSE FOR USING IT? (BUSINESS/TRADING GOODS, FINANCIAL MATTERS WITH FAMILY (REMITTANCES), SOCIAL CALLS TO FAMILY/FRIENDS, ILLNESS/DEATH/HEALTH PROBLEMS, TRAVEL/VISA ARRANGEMENTS, WILL NOT USE TELEPHONE, OTHER)

PHONE USERS. HOW MANY TIMES A MONTH DO YOU NORMAL USE A PHONE?

PHONE USERS. HOW FAR DO YOU NORMALLY TRAVEL TO MAKE A PHONE CALL (KM)?

PHONE USERS. WHAT IS THE AVERAGE DISTANCE COVERED BY EACH TELEPHONE CALL THAT YOU MAKE AND PAY FOR (KM)?

PHONE USERS. HOW MUCH DO YOU SPEND ON TELEPHONE CALLS EACH MONTH (RP)?

PHONE USERS. IN YOUR HOUSEHOLD, WHO USES THE TELEPHONE MORE? (MEN, WOMEN, EQUAL BETWEEN MEN & WOMEN, NO ONE USES TELEPHONE)

PHONE USERS. WHAT IMPROVEMENTS WOULD YOU LIKE TO SEE WITH THE TELEPHONES YOU USE NOW? (PHONE CLOSER/MORE TELEPHONES, SMALLER QUEUES, LESS EXPENSIVE, BETTER FUNCTIONING/MORE RELIABLE)

PHONE USERS. IF THE TELEPHONES WERE IMPROVED, HOW MUCH EXTRA PER MONTH WOULD YOU SPEND ON CALLS?

PHONE USERS. HOW MUCH WOULD YOU BE WILLING TO PAY/DID YOU PAY FOR INSTALLING A PHONE IN YOUR HOUSE?

PHONE USERS. HOW MUCH WOULD YOU BE WILLING TO PAY/DID YOU PAY FOR MONTHLY BASIC PHONE SERVICE AT HOME?

PHONE USERS. ONCE YOU START USING A PHONE, HOW LONG WILL YOU BE WILLING TO RETRY BEFORE YOU WOULD GIVE UP TRYING TO MAKE AN IMPORTANT CALL?

PHONE USERS. WHAT IS THE LONGEST ANYONE IN YOUR HOUSEHOLD HAS EVER SPENT TRYING TO MAKE A PHONE CALL?

PHONE USERS. WHAT IS THE MAIN PURPOSE FOR WHICH YOU USE A TELEPHONE? (BUSINESS/TRADING GOODS, FINANCIAL MATTERS WITH FAMILY (REMITTANCES), SOCIAL CALLS TO FAMILY/FRIENDS, ILLNESS/DEATH/HEALTH PROBLEMS, TRAVEL/VISA ARRANGEMENTS, OTHER)

PHONE USERS. AT YOUR REGULARLY FREQUENTED PCO/STD OFFICE ARE YOU SERVED BY A MAN OR A WOMAN?

PHONE USER. TO WHAT AREAS DO YOU CALL MOST FREQUENTLY? (NEARBY VILLAGES, CUDDALORE DISTRICT, TAMIL NADU, INDIA, WORLD)

OTHER INFORMATION SOURCES

HOW MUCH TIME DO YOU SPEND EACH DAY WATCHING TELEVISION?

HOW MUCH TIME DO YOU SPEND EACH DAY LISTENING TO THE RADIO?

HOW MUCH TIME DO YOU SPEND EACH DAY READING A NEWSPAPER?

WHAT ARE YOUR TOP THREE REASONS FOR ENGAGING IN EACH OF THESE ACTIVITIES (TV)? (EMPLOYMENT=1, BUSINESS=2, NEWS=3, POLITICS=4, MARKET PRICES=5, AGRICULTURAL INFO=6, EDUCATION/TRAINING=7, HEALTH INFORMATION=8, OTHER=9, ENTERTAINMENT)

WHAT ARE YOUR TOP THREE REASONS FOR ENGAGING IN EACH OF THESE ACTIVITIES (RADIO)? (EMPLOYMENT=1, BUSINESS=2, NEWS=3, POLITICS=4, MARKET PRICES=5, AGRICULTURAL INFO=6, EDUCATION/TRAINING=7, HEALTH INFORMATION=8, OTHER=9, ENTERTAINMENT=10)

WHAT ARE YOUR TOP THREE REASONS FOR ENGAGING IN EACH OF THESE ACTIVITIES (NEWSPAPER)? (EMPLOYMENT=1, BUSINESS=2, NEWS=3, POLITICS=4, MARKET PRICES=5, AGRICULTURAL INFO=6, EDUCATION/TRAINING=7, HEALTH INFORMATION=8, OTHER=9, ENTERTAINMENT=10)

HOW MANY TIMES A MONTH DO YOU SEND MAIL?

HOW MANY TIMES A MONTH DO YOU RECEIVE MAIL?

HOW MUCH DO YOU SPEND ON POSTAGE EACH MONTH? (RP)

COMPUTER AWARENESS AND USE

HAVE HOUSEHOLD MEMBERS EVER USED A COMPUTER?

I BELIEVE MEMBERS OF THIS HOUSEHOLD ARE FAMILIAR WITH COMPUTERS AND THE INTERNET (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

DOES A HOUSEHOLD MEMBER KNOW WHAT A COMPUTER IS? IF NOT, SKIP TO QUESTION 11.

COMPUTERS WILL IMPROVE THE OVERALL QUALITY OF LIFE IN THIS VILLAGE. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

WHAT MEMBERS OF THIS HOUSEHOLD HAVE USED A COMPUTER? NAME/ID#

COMPUTERS WILL IMPROVE MY LIFE IN A DIRECT WAY BY PROVIDING SERVICES TO WHICH I WOULD NOT OTHERWISE HAVE ACCESS. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

WHAT MEMBERS OF THIS HOUSEHOLD HAVE USED A COMPUTER? HOW OFTEN? (LESS THAN ONCE A YEAR=1, A FEW TIMES A YEAR=2, AT LEAST ONCE A MONTH=3, AT LEAST ONCE A WEEK=4, AT LEAST ONCE A DAY=5)

COMPUTERS ARE THE MOST IMPORTANT RESOURCE NEEDED IN OUR SCHOOLS. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

WHAT MEMBERS OF THIS HOUSEHOLD HAVE USED A COMPUTER? WHERE? (HOME=1, KIOSK IN VILLAGE=2, KIOSK IN OTHER VILLAGE=3, FRIENDS/RELATIVES=4, AT WORK=5, AT SCHOOL=6, OTHER=7)

COMPUTERS AND ACCESS TO THE INTERNET ARE MORE IMPORTANT TO OUR VILLAGE'S FUTURE THAN OTHER THINGS LIKE IMPROVED WATER DISTRIBUTION, BETTER PUBLIC TRANSPORTATION, AND BETTER ROADS. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

WHAT MEMBERS OF THIS HOUSEHOLD HAVE USED A COMPUTER? WHAT FOR? (EID PARRY PORTAL=1, EMAIL=2, BUSINESS=4, GOVERNMENT SERVICES=4, NEWS=5, ENTERTAINMENT (GAMES)=6, EDUCATION/TRAINING=7)

I WOULD BE MORE LIKELY TO ENCOURAGE MY CHILDREN TO ATTEND SCHOOL IF HE/SHE COULD LEARN TO USE COMPUTERS AND THE INTERNET. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

WHAT MEMBERS OF THIS HOUSEHOLD HAVE USED THE INTERNET? NAME/ID#

WHAT MEMBERS OF THIS HOUSEHOLD HAVE USED A COMPUTER? HOW OFTEN? (LESS THAN ONCE A YEAR=1, A FEW TIMES A YEAR=2, AT LEAST ONCE A MONTH=3, AT LEAST ONCE A WEEK=4, AT LEAST ONCE A DAY=5)

I WOULD BE WILLING TO PAY 10 RP TO USE THE INTERNET FOR ONE HOUR. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

WHAT MEMBERS OF THIS HOUSEHOLD HAVE USED A INTERNET? WHERE? (HOME=1, KIOSK IN VILLAGE=2, KIOSK IN OTHER VILLAGE=3, FRIENDS/RELATIVES=4, AT WORK=5, AT SCHOOL=6, OTHER=7)

I BELIEVE THAT COMPUTERS WOULD HELP MY CHILD LEARN BETTER IN SCHOOL BY PROVIDING ACCESS TO MORE INFORMATION AND MAKING LEARNING FUN. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

WHAT MEMBERS OF THIS HOUSEHOLD HAVE USED A INTERNET? WHAT FOR? (EID PARRY PORTAL=1, EMAIL=2, BUSINESS=4, GOVERNMENT SERVICES=4, NEWS=5, ENTERTAINMENT (GAMES)=6, EDUCATION/TRAINING=7)

I BELIEVE THAT MY VILLAGE SCHOOL SHOULD SPEND 20 PERCENT OF ITS ANNUAL BUDGET TO MAINTAIN A COMPUTER AND PAY FOR AN INTERNET CONNECTION. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

HOW MUCH WOULD YOU BE WILLING TO PAY TO RECEIVE ONE HOUR OF COMPUTER INSTRUCTION?

HOW MUCH WOULD YOU BE WILLING TO PAY TO RECEIVE ONE HOUR OF ACCESS TO THE INTERNET?

THE MAIN REASON I WOULD BUY A COMPUTER COULD BE TO ACCESS THE INTERNET. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

WOULD SOMEONE IN THIS HOUSEHOLD ATTEND FREE MONTHLY MEETINGS IN THE VILLAGE THAT TEACH ABOUT COMPUTERS?

THE MAIN REASON I WOULD BUY A COMPUTER WOULD BE TO LEARN SKILLS THAT WOULD HELP ME FIND A BETTER JOB. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

WOULD SOMEONE IN THIS HOUSEHOLD SPEND AN ENTIRE WEEK IN A FREE COURSE TEACHING ABOUT COMPUTERS?

IF BASIC COMPUTER TRAINING WERE GIVEN TO A HOUSEHOLD MEMBER, WOULD THAT PERSON BE WILLING TO DONATE FIVE HOURS A WEEK FOR ONE YEAR TO TEACHING OTHER VILLAGE MEMBERS ABOUT COMPUTERS?

THE INTERNET REALLY ONLY BENEFITS THE RICH. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

IF I LEARNED TO USE A COMPUTER I WOULD GO TO THE CITY TO GET A BETTER JOB. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

I WOULD TRY TO RAISE MONEY TO SEND MY CHILD TO A WEEK-LONG COMPUTER CAMP IF IT WERE IN THE AREA. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

I WISH LOCAL GOVERNMENT WOULD SPEND MORE RESOURCES ON PROVIDING INTERNET CONNECTIONS AND SERVICES TO VILLAGES EVEN IF IT MEANS LOSING EXISTING SERVICES. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

I WOULD ATTEND MONTHLY MEETINGS IN A NEARBY VILLAGE THAT EXPLAINED ABOUT COMPUTERS AND THE INTERNET. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

TEN YEARS AGO, THE QUALITY OF LIFE IN THIS HOUSEHOLD WAS HIGHER THAN IT IS TODAY (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

QUESTION OMITTED. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

GENERAL QUALITY OF LIFE

AGRICULTURE HAS BECOME A MORE PROFITABLE INDUSTRY FOR OUR FAMILY IN THE LAST TEN YEARS. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

EID PARRY HAS PROVIDED A SERVICE TO ME IN THE LAST THREE YEARS THAT HAS IMPROVED MY LIFE. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

SCHOOLS ARE BETTER IN THIS VILLAGE TODAY THAN THEY WERE TEN YEARS AGO. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

EID PARRY'S ROLE IN THE CUDDALORE DISTRICT HAS BEEN A POSITIVE ONE. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

FARMERS IN THIS REGION HAVE A GOOD QUALITY OF LIFE. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

I BELIEVE THAT I HAVE A GOOD QUALITY OF LIFE. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

IF A PERSON WORKS VERY HARD HE OR SHE CAN GET A BETTER LIFE FOR HIS OR HER FAMILY. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

TEN YEARS AGO, SCHOOLS IN THIS VILLAGE WERE WORSE THAN THEY ARE TODAY. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

I AM AN ACTIVE PARTICIPANT IN COMMUNITY AFFAIRS. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

ROLE OF WOMEN IN VILLAGE

WOMEN SHOULD HAVE RIGHTS AND EDUCATION EQUAL TO MEN IN THIS VILLAGE. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

THERE ARE STRONG WOMEN LEADERS IN THIS COMMUNITY. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

WOMEN SHOULD BE ALLOWED TO PERFORM ANY JOB OR TASK OPEN TO 3. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

IN THIS VILLAGE, WOMEN HAVE EQUAL ACCESS TO MOST SERVICES AND OPPORTUNITIES. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

EXISTING NGOs AND SOCIAL GROUPS IN THE AREA ARE ADEQUATELY ADDRESSING WOMEN'S ISSUES IN THIS VILLAGE. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

THERE ARE NOT ENOUGH OPPORTUNITIES IN THIS VILLAGE FOR WOMEN TO IMPROVE THEIR EDUCATION. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

COMMUNITY LEADERS DO NOT UNDERSTAND THE CONCERNS OF WOMEN IN THIS COMMUNITY. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

WOMEN ARE OFTEN TREATED UNFAIRLY IN THIS VILLAGE BECAUSE OF THEIR GENDER. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

IN THIS VILLAGE, WOMEN ARE TREATED MORE UNFAIRLY THAN IN OTHER VILLAGES IN THE AREA. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

WOMEN PLAY AN ACTIVE ROLE IN SHAPING DAILY LIFE IN THIS COMMUNITY. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

THIS VILLAGE HAS MOVED TOO FAR AWAY FROM TRADITIONAL VALUES. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

WOMEN IN THIS VILLAGE PLAY A SIGNIFICANT ROLE IN MAKING LONG TERM DECISIONS AFFECTING EVERYONE. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

IN THIS VILLAGE, THERE IS A STRONG PREFERENCE FOR MALE CHILDREN OVER FEMALE CHILDREN. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

THE WOMEN IN THIS VILLAGE ARE GENERALLY HAPPY WITH THEIR LIVES. (STRONGLY AGREE=1, AGREE=2, DISAGREE=3, STRONGLY DISAGREE=4, DON'T KNOW=5)

APPENDIX B

METHODOLOGY

Introduction

The content of surveys and interview questions is designed to establish the existing condition in Nellikuppam's villages. For this reason, surveys collect demographic information, to include data on village customs, gender, caste, religion, economic status, and political affiliation. They also incorporate a general needs assessment to determine what specific services villagers desire. This assessment will first elicit ideas from villagers then suggest possibilities, asking villagers to assess their importance. Interviewers will also collect information on businesses, willingness to pay, and awareness levels (of computers and the internet) in the villages.

Of particular concern was the need to balance the desire to collect specific pieces of data with a sensitivity to the feelings and needs of the communities under study. Particular villages have been judged, by those most familiar with their operations, to be extremely sensitive to certain questions. In such cases, the informational value of the data will be carefully weighed against the potential to disrupt village life.

Cooperating in the data collection effort are faculty and graduate students from Madurai Kamaraj University's Center for Entrepreneurship Development. With a broad range of backgrounds and skills, these individuals constitute the core of the field research team. All are keenly aware of the need to respect villagers in areas under study, recognizing the simple fact that excessive study of any one village has the potential to leave villagers feeling as if they have been placed in a zoo or under a microscope. The selection of villages for study will therefore take into account past research in a given area, favoring those sites not previously studied.

Of the hundreds of villages in the Nellikuppam area, only forty are to be provided with WLL internet access by EID Parry before the end of 2001. Seventeen villages currently have kiosks (as of July 2001). The extension of this network will depend upon the success of the initial installations. Almost none of these kiosks, however, is operating at its full capability. Preliminary site visits suggest that usage is limited in both time and content. Though operators are provided with basic training and education about the types of materials available on the EID Parry intranet, they have very little awareness of the types of information available over the internet. Examination of the sites that have had kiosks from as much as six months (the longest period of possession) show that the average operator uses no more than about twelve internet sites. (While it is possible they have cleared their history lists and caches, this does not seem likely given the level of sophistication of the users.) In addition, operators describe a very limited use to this point. During field visits, most spoke of usage primarily at night by groups of 3-5 males coming after the workday had ended. Total user populations varied between 20 and 50 people with women constituting less than 5 percent of users. This suggests that the impacts of these kiosks have been minimal to date, justifying a study of what could still be described as a base condition.

EID Parry's current model for kiosk installation and expansion calls for a six month operator trial period. Operators are provided with basic training following which kiosks are installed. The operator then has six months to evaluate the kiosk. Those choosing to retain the kiosk are then required to make either a lump sum payment or start a monthly payment plan. Operations and maintenance costs are covered by EID Parry as part of the agreement. Total cost for each kiosk is approximately Rp 30,000 or \$650. If the existing model proves successful, it will be expanded to include farmers serving EID Parry factories throughout India.

Village Level Surveys

Village level surveys will be conducted in all three village areas studied. Village councils will be given a written survey asking about overall village life (general demographic information, common problems, etc.). A research assistant will talk council members through the survey then leave it for three days. The research assistant will then return and review the responses with the village council, ensuring that they are

both accurate and reasonable. National census data from 1991 and 2001 as well as the experience of local EID Parry officials will be used to supplement and verify the information in the village surveys. Though the 2001 data has not been released in full, parts have been published and will be used in analysis.

Village Business Surveys

Village business surveys will be orally administered to a systematic sample of business owners (taking every kth business along a major road) in each village as time allows. These surveys are designed to evaluate the potential for internet technology to improve the speed and efficiency of business transactions.

Census Data, GIS Resources, Maps, and Aerial Photos

India census data, GIS resources, official/commercial maps, and aerial photos will be sought to verify existing village demographics and layouts. Potential sources for these materials include EID Parry, national/state government officials, regional universities, and commercial information service providers. Where feasible, supplementary materials will be purchased from the private sector. Much greater research is required into the types and costs of materials available and, for this reason, one research assistant will devote a significant amount of time to this process.

Oral Household Surveys

Oral surveys will be performed in each village, collecting information from as many households as possible. These surveys (a systematic sample of village households from each of the 3 village areas) will attempt to establish baseline quality of life, knowledge levels of computers and the internet, and opinions about the potential for the internet in the village. These surveys are closely coordinated with those of the SARI group to allow cross-project comparisons. Surveys will be field tested prior to implementation.

Written Household Surveys

Oral surveys will be supplemented with written surveys in the three villages. Though there is extreme concern among those experts interviewed about the feasibility of written surveys, field interviews suggest otherwise. Meetings with village leaders highlight several facts. First, almost every village household has at least one school age child. Second, though illiteracy rates are high, almost every household has (or knows) at least one person who can read and write in Tamil. Because of uncertainty about the accuracy and response levels of this method of data collection it will be field tested, with slight variation, in each of the four villages. In the first village, surveys will be distributed to a systematic sample of village households (each nth house) with a stamped envelope provided for their return. In a second village, surveys will be dropped off and retrieved in person two days later. In a third village, surveys will be dropped with an incentive offered if the survey is complete upon pick-up two days later (perhaps 5 rupees payment for a complete form). In the fourth village, surveys will be administered in person to a systematic sample of village households with each survey taking approximately 10 minutes to complete. The results will be compared with those of similar questions in the more intense oral household surveys for statistically significant differences. If major discrepancies occur, the written and oral surveys will be adjusted. Once results match sufficiently, surveys may be distributed to other villages in Nellikuppam. Though implementation of written surveys will be extremely challenging, the potential to collect large quantities of data at relatively low cost merits exploration. Written surveys would also allow cost effective follow-up research on an annual basis. [It is extremely likely that there will be a self-selection process seen in any distribution that excludes the poorest and least literate portion of the population. The information on actual respondents (the most accessible portion of the population) could, nonetheless, be useful in characterizing likely users.]

Group Interviews

Two group interviews with 5-10 persons (believed to offer a representative sample of village life) will be conducted in each of the four villages. These interviews will be extremely subjective attempts to elicit

information from villages about the quality of village life, unique characteristics of a particular village that might distort survey results, and knowledge of the internet. Notes will be taken by interviewers and transcribed at the end of each day.

Village Charettes

A series of charettes will be performed in the four villages. The charettes will follow a normal charette process. In each village approximately 3-5 individuals will be selected from either four major geographic areas of the village or, if feasible, four of the larger castes in the village. These groups will then be led through a process in which they will draw a map of the village. (Materials will be provided.) The final product is intended to be a map/diagram of how a specific geographic collection or caste of people perceives the village. It will diagrammatically indicate which areas the interviewees use most and least often. These charettes are thus designed to discover what sort of spatial awareness a particular group has of its surroundings and what areas are most commonly used by the villages. If, for example, some areas of the village are virtually unknown to a particular group, this would suggest that full, equitable penetration cannot be provided in that village by placing a kiosk at that point. Conversely, some areas may be central points of interaction for all castes and, therefore, provide excellent locations for kiosks.

Pop-up Surveys and Active Internet Monitoring

Popup surveys and active monitoring of computer internet usage have enormous potential. Personal user profiles would be set up in which each user is assigned an identification number. That user would then, through a java popup survey, be profiled. Information on the user's internet usage (sites visited and duration of visits) would be collected and stored in a central database at IIT-M in a series of automatic weekly transfers.

Establishing Existing Internet Usage in Cities

Because data on the historical evolution of PCO and cable television expansion is limited, it may prove informative to establish existing internet usage in large cities where kiosks are relatively common. This information might offer some hint as to how village usage will evolve. Though villages have a distinctly different social life, one might reasonably expect some parallels in usage to evolve between cities and villages over time. Current city usage might thus serve as a predictor of future village use. Some information of this type is available through private firms. The prices are, however, prohibitively high (\$3,000-\$5,000 for usage information). Through connections at IIT-M and the local government, it might be possible to convince private providers to set up tracking systems of the type described above. This information would describe existing city use, offer some insight into future village use, and, perhaps, offer marketing information that would be valuable to the private providers cooperating in the study. *[Some small potential exists to avoid this step in the process. Existing internet café operators in some areas may already track usage and might be convinced to share their data.]*

Methodological Areas for Concern

Categorization of Villages: The decision has been made to group villages to receive kiosks into three categories. These categories are based on the physical conditions surrounding the kiosks—whether they are in a private home, commercial environment, or near public service (government) facilities. One village from each category will be randomly selected. One additional will be selected from among those not projected to have kiosks. It will serve as the control. Because the decision on how to categorize individual villages will be highly subjective, a set of general criteria has been developed for each. Private home kiosks are those located in individual residences that serve primarily one household. These kiosks will often be geographically isolated. Commercially located kiosks are those in Public Call Offices, stores, restaurants, hotels, etc., normally well-integrated into the urban fabric. Commercially located kiosks having a major government or public service adjacency within approximately ten meters on either side of the street will constitute the third category.

Small Village Sample Size: The choice to survey three villages was made to provide a sufficient sample size to allow more rigorous statistical analysis of life in individual villages. While a broader survey that touches 3-5 households in each of hundreds of villages may allow some characterization of an entire region, it does not lend itself to evaluating how villages differ and why some kiosks are more successful than others. While a better image is given of internal village life, the small number of villages sampled means that researchers must be careful to avoid making rigorous statistical comparisons *between* villages.

Accuracy of Official Data: The SARI team has found a number of cases in which official government census data were incorrect. Researchers must make an effort to corroborate data with other sources. A major challenge will also come in locating accurate lists of village households for a random sample selection. In analysis of data collected, the research team will need to consider whether some groups are systematically excluded from a given list.

Surveyor Experience: Many of the field researchers will be inexperienced. More experienced researcher must make an active effort to debrief these individuals each night, guiding them through the process.

Surveyor Fatigue: The twelve days scheduled for surveying villages will be intense. Workers will spend 8-10 hours a day in the field with 1-2 hours each night synthesizing the data. The project manager must ensure that workers are not overtasked and that the repetitive nature of the surveys does not result in falsification of data.

Bias Arising From EID Parry Relationship: Researchers must be careful to maintain their objectivity in the face of constant contact with EID Parry officials. EID Parry employees have expressed a great deal of pride in the work they are doing and, consequently, may paint an overly optimistic image of the project's successes. EID Parry and the villages will be best served by an honest, accurate assessment of existing and potential kiosk-villages in Nellikuppam. The challenge will be constructing surveys and interview formats that are not too heavily influenced by the presence of EID Parry employees. It has, therefore, been explicitly agreed that researchers will have full autonomy in determining which findings go into the final report.

Mitigation of Unintended Impacts

Of obvious concern in any research of this type are the unintended consequences of its administration. The research team has a firm moral commitment to minimize such impacts. As the survey progresses, potential problems will be identified and mitigation proposals offered.

For example, the mere presence of a large, organized survey team in a village may falsely raise expectations, causing villagers to be disappointed if they do not receive tangible benefits such as grants or loans. Such a disappointment might negatively bias villagers toward follow-up surveys or, more generally, the introduction of IT in villages. One mitigation strategy for this problem would be the inclusion of a statement at the beginning and end of the surveys that explains both the survey intent and the researchers' role in the process.

Additional negative impacts and mitigation proposals will be added as they are identified.

APPENDIX C

HOUSEHOLD AMENITIES

	BATHROOM WITHIN HOUSE	RADIO/ TRANSISTOR	COMPUTER	BICYCLE	CAR/JEEP/ VAN	KITCHEN WITHIN THE HOUSE	TELEVISION	TELEPHONE	SCOOTER/ MOTORCYCLE/ MOPED	MOTORIZED FARM EQUIPMENT (TRACTOR, ETC.)	
COMBINED VILLAGES	78	87	8	134	8	126	111	26	37	10	Y
	143	134	211	87	211	95	101	185	175	178	N
	1	1	3	1	3	1	10	11	10	34	NO RESPONSE
MALIGAIMEDU	33	28	2	45	3	44	38	13	14	3	Y
	44	49	74	32	73	33	36	61	60	51	N
	0	0	1	0	1	0	3	3	3	23	NO RESPONSE
VELLAPAKKAM	18	25	2	37	3	37	32	4	11	2	Y
	56	49	71	37	70	37	38	65	59	65	N
	0	0	1	0	1	0	4	5	4	7	NO RESPONSE
KKV	27	34	4	52	2	45	41	9	12	5	Y
	43	36	66	18	68	25	27	59	56	62	N
	1	1	1	1	1	1	3	3	3	4	NO RESPONSE

PERCEIVED QUALITY OF KEY SERVICES														
ASSESS THE QUALITY IN YOUR VILLAGE	COMBINED VILLAGES							MALAIGAIMEDU						
	VERY BAD	BAD	AVERAGE	GOOD	VERY GOOD	NR	SAMPLE	VERY BAD	BAD	AVERAGE	GOOD	VERY GOOD	NR	SAMPLE
	BETTER	WORSE						BETTER	WORSE					
SOCIAL SERVICES.	78	64	33	25	8	14	222	34	25	8	6	2	2	77
	62	113				47	222	17	44				16	77
TRANSPORTATION SERVICES.	17	29	47	76	40	13	222	2	5	17	35	16	2	77
	143	34				45	222	59	2				16	77
COMMUNICATION SERVICES.	16	22	68	61	40	15	222	5	8	29	21	10	4	77
	140	34				48	222	49	12				16	77
BANKING SERVICES.	91	49	23	28	14	17	222	28	13	12	9	7	8	77
	59	113				50	222	26	33				18	77
LEGAL SERVICES.	125	47	21	9	1	19	222	50	16	2	1	0	8	77
	27	145				50	222	7	52				18	77
MEDICAL SERVICES.	59	63	29	39	19	13	222	22	21	7	16	8	3	77
	56	119				47	222	21	40				16	77
AMBULANCE SERVICES.	179	16	10	3	2	12	222	68	2	2	1	1	3	77
	15	162				45	222	2	59				16	77
SCHOOLS.	9	15	77	86	22	13	222	3	4	27	30	10	3	77
	153	20				49	222	58	2				17	77
CULTURAL SERVICES.	108	45	35	16	5	13	222	42	20	3	8	1	3	77
	43	132				47	222	13	48				16	77
ELDERLY/DISABLED SERVICES.	107	58	18	14	12	13	222	48	15	3	3	5	3	77
	21	155				46	222	6	55				16	77
GOVERNMENT SERVICES.	92	47	47	20	2	14	222	36	17	15	6	0	3	77
	45	128				49	222	15	46				16	77
AGRICULTURAL INFORMATION.	61	40	48	45	14	14	222	23	18	12	17	5	2	77
	104	72				46	222	35	27				15	77

PERCEIVED QUALITY OF KEY SERVICES														
ASSESS THE QUALITY IN YOUR VILLAGE	VELLEPAKKAM							KKV						
	VERY BAD	BAD	AVERAGE	GOOD	VERY GOOD	NR	SAMPLE	VERY BAD	BAD	AVERAGE	GOOD	VERY GOOD	NR	SAMPLE
	BETTER	WORSE						BETTER	WORSE					
SOCIAL SERVICES.	31	17	12	6	3	5	74	13	22	13	13	3	7	71
	20	34				20	74	25	35				11	71
TRANSPORTATION SERVICES.	14	17	14	17	7	5	74	1	7	16	24	17	6	71
	31	26				17	74	53	6				12	71
COMMUNICATION SERVICES.	8	8	24	16	12	6	74	3	6	15	24	18	5	71
	38	16				20	74	53	6				12	71
BANKING SERVICES.	40	17	4	6	3	4	74	23	19	7	13	4	5	71
	15	41				18	74	18	39				14	71
LEGAL SERVICES.	39	20	3	7	0	5	74	38	11	16	1	1	6	71
	9	46				19	74	11	47				13	71
MEDICAL SERVICES.	23	23	12	8	3	5	74	14	19	10	15	8	5	71
	14	41				19	74	21	38				12	71
AMBULANCE SERVICES.	56	8	4	1	1	4	74	55	6	4	1	0	5	71
	8	48				18	74	5	55				11	71
SCHOOLS.	6	6	28	25	4	5	74	0	5	22	31	8	5	71
	42	13				19	74	53	5				13	71
CULTURAL SERVICES.	35	13	15	5	2	4	74	31	12	17	3	2	6	71
	14	42				18	74	16	42				13	71
ELDERLY/DISABLED SERVICES.	30	26	6	4	3	5	74	29	17	9	7	4	5	71
	5	51				18	74	10	49				12	71
GOVERNMENT SERVICES.	37	15	11	6	0	5	74	19	15	21	8	2	6	71
	14	42				18	74	16	40				15	71
AGRICULTURAL INFORMATION.	21	12	14	15	7	5	74	17	10	22	13	2	7	71
	34	22				18	74	35	23				13	71

HOUSEHOLD PERCEPTION OF GENERAL ISSUES

		STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE	DON'T KNOW
I WOULD ATTEND MONTHLY MEETINGS IN A NEARBY VILLAGE THAT EXPLAINED ABOUT COMPUTERS AND THE INTERNET.	COMBINED VILLAGES	35	105	51	11	18
	MALIGAIMEDU	15	33	20	1	7
	VELLAPAKKAM	12	36	15	7	4
	KKV	8	36	16	3	7
TEN YEARS AGO, THE QUALITY OF LIFE IN THIS HOUSEHOLD WAS HIGHER THAN IT IS TODAY	COMBINED VILLAGES	37	130	31	20	1
	MALIGAIMEDU	37	130	31	20	1
	VELLAPAKKAM	9	45	8	10	1
	KKV	13	41	12	4	0
AGRICULTURE HAS BECOME A MORE PROFITABLE INDUSTRY FOR OUR FAMILY IN THE LAST TEN YEARS.	COMBINED VILLAGES	18	95	55	32	15
	MALIGAIMEDU	8	33	20	10	4
	VELLAPAKKAM	8	35	15	8	5
	KKV	2	27	20	14	6
E.I.D. PARRY HAS PROVIDED A SERVICE TO ME IN THE LAST THREE YEARS THAT HAS IMPROVED MY LIFE.	COMBINED VILLAGES	24	56	69	46	27
	MALIGAIMEDU	7	14	29	16	11
	VELLAPAKKAM	9	18	26	14	7
	KKV	8	24	14	16	9
SCHOOLS ARE BETTER IN THIS VILLAGE TODAY THAN THEY WERE TEN YEARS AGO.	COMBINED VILLAGES	47	138	26	6	2
	MALIGAIMEDU	12	51	10	3	1
	VELLAPAKKAM	17	44	8	3	0
	KKV	18	43	8	0	1
E.I.D. PARRY'S ROLE IN THE CUDDALORE DISTRICT HAS BEEN A POSITIVE ONE.	COMBINED VILLAGES	30	101	41	13	37
	MALIGAIMEDU	10	33	16	3	15
	VELLAPAKKAM	8	33	19	3	11
	KKV	12	35	6	7	11
FARMERS IN THIS REGION HAVE A GOOD QUALITY OF LIFE.	COMBINED VILLAGES	19	109	53	32	8
	MALIGAIMEDU	6	26	27	15	2
	VELLAPAKKAM	9	37	15	11	2
	KKV	4	46	11	6	4
I BELIEVE THAT I HAVE A GOOD QUALITY OF LIFE.	COMBINED VILLAGES	29	99	51	38	4
	MALIGAIMEDU	6	27	23	19	2
	VELLAPAKKAM	10	30	20	13	1
	KKV	13	42	8	6	1
IF A PERSON WORKS VERY HARD HE OR SHE CAN GET A BETTER LIFE FOR HIS OR HER FAMILY.	COMBINED VILLAGES	80	119	16	6	0
	MALIGAIMEDU	24	46	3	4	0
	VELLAPAKKAM	21	45	6	2	0
	KKV	35	28	7	0	0
TEN YEARS AGO, SCHOOLS IN THIS VILLAGE WERE WORSE THAN THEY ARE TODAY.	COMBINED VILLAGES	44	108	29	20	10
	MALIGAIMEDU	16	39	9	8	3
	VELLAPAKKAM	15	29	13	9	3
	KKV	13	40	7	3	4
I AM AN ACTIVE PARTICIPANT IN COMMUNITY AFFAIRS.	COMBINED VILLAGES	22	60	76	48	10
	MALIGAIMEDU	7	17	36	14	3
	VELLAPAKKAM	10	15	25	18	3
	KKV	5	28	15	16	4

HOUSEHOLD PERCEPTION OF WOMEN'S ISSUES

		STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE	DON'T KNOW
WOMEN SHOULD HAVE RIGHTS AND EDUCATION EQUAL TO MEN IN THIS VILLAGE.	COMBINED VILLAGES	49	95	42	6	5
	MALIGAIMEDU	19	37	11	2	2
	VELLAPAKKAM	13	27	20	4	1
THERE ARE STRONG WOMEN LEADERS IN THIS COMMUNITY.	KKV	17	31	11	0	2
	COMBINED VILLAGES	9	33	56	44	23
	MALIGAIMEDU	7	8	27	15	12
WOMEN SHOULD BE ALLOWED TO PERFORM ANY JOB OR TASK OPEN TO MEN.	VELLAPAKKAM	1	9	31	19	5
	KKV	1	16	28	10	6
	COMBINED VILLAGES	16	92	63	17	9
IN THIS VILLAGE, WOMEN HAVE EQUAL ACCESS TO MOST SERVICES AND OPPORTUNITIES.	MALIGAIMEDU	6	33	21	7	4
	VELLAPAKKAM	4	25	27	5	4
	KKV	6	34	15	5	1
EXISTING NGOs AND SOCIAL GROUPS IN THE AREA ARE ADEQUATELY ADDRESSING WOMEN'S ISSUES IN THIS VILLAGE.	COMBINED VILLAGES	24	108	42	18	4
	MALIGAIMEDU	11	33	18	7	2
	VELLAPAKKAM	8	33	14	9	1
THERE ARE NOT ENOUGH OPPORTUNITIES IN THIS VILLAGE FOR WOMEN TO IMPROVE THEIR EDUCATION.	KKV	5	42	10	2	1
	COMBINED VILLAGES	5	29	80	43	37
	MALIGAIMEDU	3	13	25	16	12
COMMUNITY LEADERS DO NOT UNDERSTAND THE CONCERNS OF WOMEN IN THIS COMMUNITY.	VELLAPAKKAM	2	5	29	15	11
	KKV	0	11	26	9	14
	COMBINED VILLAGES	13	63	67	87	15
WOMEN ARE OFTEN TREATED UNFAIRLY IN THIS VILLAGE BECAUSE OF THEIR GENDER.	MALIGAIMEDU	5	23	18	16	8
	VELLAPAKKAM	5	19	24	12	5
	KKV	3	21	25	9	2
IN THIS VILLAGE, WOMEN ARE TREATED MORE UNFAIRLY THAN IN OTHER VILLAGES IN THE AREA.	COMBINED VILLAGES	20	72	46	31	25
	MALIGAIMEDU	9	25	11	10	14
	VELLAPAKKAM	6	30	12	10	7
WOMEN PLAY AN ACTIVE ROLE IN SHAPING DAILY LIFE IN THIS COMMUNITY.	KKV	5	17	23	11	4
	COMBINED VILLAGES	13	45	69	56	13
	MALIGAIMEDU	6	16	22	20	6
THIS VILLAGE HAS MOVED TOO FAR AWAY FROM TRADITIONAL VALUES.	VELLAPAKKAM	4	16	22	19	4
	KKV	3	13	25	16	3
	COMBINED VILLAGES	14	34	73	60	14
WOMEN IN THIS VILLAGE PLAY A SIGNIFICANT ROLE IN MAKING LONG TERM DECISIONS EFFECTING EVERYONE.	MALIGAIMEDU	4	11	26	21	6
	VELLAPAKKAM	6	9	26	20	4
	KKV	4	14	19	19	4
IN THIS VILLAGE, THERE IS A STRONG PREFERENCE FOR MALE CHILDREN OVER FEMALE CHILDREN.	COMBINED VILLAGES	20	62	81	20	13
	MALIGAIMEDU	7	25	25	6	8
	VELLAPAKKAM	5	17	31	10	2
THE WOMEN IN THIS VILLAGE ARE GENERALLY HAPPY WITH THEIR LIVES.	KKV	8	20	25	4	5
	COMBINED VILLAGES	5	64	56	56	13
	MALIGAIMEDU	2	23	16	21	7
WOMEN IN THIS VILLAGE PLAY A SIGNIFICANT ROLE IN MAKING LONG TERM DECISIONS EFFECTING EVERYONE.	VELLAPAKKAM	2	17	26	17	3
	KKV	1	24	14	18	3
	COMBINED VILLAGES	3	47	90	32	22
IN THIS VILLAGE, THERE IS A STRONG PREFERENCE FOR MALE CHILDREN OVER FEMALE CHILDREN.	MALIGAIMEDU	2	14	33	9	11
	VELLAPAKKAM	0	16	31	14	4
	KKV	1	17	29	9	7
THE WOMEN IN THIS VILLAGE ARE GENERALLY HAPPY WITH THEIR LIVES.	COMBINED VILLAGES	15	46	49	73	11
	MALIGAIMEDU	5	17	20	20	7
	VELLAPAKKAM	5	12	15	31	2
THE WOMEN IN THIS VILLAGE ARE GENERALLY HAPPY WITH THEIR LIVES.	KKV	5	17	14	22	2
	COMBINED VILLAGES	42	100	24	11	9
	MALIGAIMEDU	20	29	11	4	5
THE WOMEN IN THIS VILLAGE ARE GENERALLY HAPPY WITH THEIR LIVES.	VELLAPAKKAM	15	31	11	5	2
	KKV	13	49	2	2	2

COMPUTER AWARE HOUSEHOLD PERCEPTION OF COMPUTER/INTERNET ACCESS		STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE	DON'T KNOW
I BELIEVE MEMBERS OF THIS HOUSEHOLD ARE FAMILIAR WITH COMPUTERS AND THE INTERNET	COMBINED VILLAGES	6	30	2	10	7
	MALIGAIMEDU	2	7	2	8	4
	VELLAPAKKAM	2	9	0	1	2
I BELIEVE MEMBERS OF THIS HOUSEHOLD ARE FAMILIAR WITH COMPUTERS AND THE INTERNET	KKV	2	14	0	1	1
	COMBINED VILLAGES	16	25	1	1	12
	MALIGAIMEDU	7	8	1	1	6
COMPUTERS WILL IMPROVE THE OVERALL QUALITY OF LIFE IN THIS VILLAGE.	VELLAPAKKAM	5	7	0	0	2
	KKV	4	10	0	0	4
	COMBINED VILLAGES	7	29	2	4	13
COMPUTERS WILL IMPROVE MY LIFE IN A DIRECT WAY BY PROVIDING SERVICES TO WHICH I WOULD NOT OTHERWISE HAVE ACCESS.	MALIGAIMEDU	3	9	2	2	7
	VELLAPAKKAM	3	6	0	2	3
	KKV	1	14	0	0	3
COMPUTERS ARE THE MOST IMPORTANT RESOURCE NEEDED IN OUR SCHOOLS.	COMBINED VILLAGES	29	16	5	0	5
	MALIGAIMEDU	12	6	4	0	1
	VELLAPAKKAM	8	4	0	0	2
COMPUTERS AND ACCESS TO THE INTERNET ARE MORE IMPORTANT TO OUR VILLAGE'S FUTURE THAN IMPROVED WATER DISTRIBUTION, BETTER PUBLIC TRANSPORTATION, AND BETTER ROADS.	KKV	9	6	1	0	2
	COMBINED VILLAGES	14	30	1	2	7
	MALIGAIMEDU	7	10	1	2	3
COMPUTERS ARE THE MOST IMPORTANT RESOURCE NEEDED IN OUR SCHOOLS.	VELLAPAKKAM	4	8	0	0	2
	KKV	3	12	0	0	2
	COMBINED VILLAGES	17	33	0	1	3
COMPUTERS AND ACCESS TO THE INTERNET ARE MORE IMPORTANT TO OUR VILLAGE'S FUTURE THAN IMPROVED WATER DISTRIBUTION, BETTER PUBLIC TRANSPORTATION, AND BETTER ROADS.	MALIGAIMEDU	10	11	0	1	1
	VELLAPAKKAM	4	9	0	0	1
	KKV	3	13	0	0	1
I WOULD BE MORE LIKELY TO ENCOURAGE MY CHILDREN TO ATTEND SCHOOL IF HE/SHE COULD LEARN TO USE COMPUTERS AND THE INTERNET.	COMBINED VILLAGES	17	33	0	1	3
	MALIGAIMEDU	10	11	0	1	1
	VELLAPAKKAM	4	9	0	0	1
I WOULD BE WILLING TO PAY 10 RP TO USE THE INTERNET FOR ONE HOUR.	KKV	3	13	0	0	1
	COMBINED VILLAGES	15	25	6	5	3
	MALIGAIMEDU	7	8	4	3	1
COMPUTERS WOULD HELP MY CHILD LEARN IN SCHOOL BY PROVIDING ACCESS TO MORE INFORMATION AND MAKING LEARNING FUN.	VELLAPAKKAM	5	6	1	1	1
	KKV	3	11	1	1	1
	COMBINED VILLAGES	12	31	6	1	4
I BELIEVE THAT MY VILLAGE SCHOOL SHOULD SPEND 20 PERCENT OF ITS ANNUAL BUDGET FOR A COMPUTER AND INTERNET CONNECTION.	MALIGAIMEDU	7	12	3	0	1
	VELLAPAKKAM	4	6	2	1	1
	KKV	1	13	1	0	2
THE MAIN REASON I WOULD BUY A COMPUTER COULD BE TO ACCESS THE INTERNET.	COMBINED VILLAGES	20	24	2	3	5
	MALIGAIMEDU	8	10	1	2	2
	VELLAPAKKAM	5	6	1	1	1
THE MAIN REASON I WOULD BUY A COMPUTER WOULD BE TO LEARN SKILLS THAT WOULD HELP ME FIND A BETTER JOB.	KKV	7	8	0	0	2
	COMBINED VILLAGES	0	13	21	5	16
	MALIGAIMEDU	0	7	3	0	13
THE INTERNET REALLY ONLY BENEFITS THE RICH.	VELLAPAKKAM	0	3	10	0	1
	KKV	0	3	8	5	2
	COMBINED VILLAGES	11	20	8	2	13
IF I LEARNED TO USE A COMPUTER I WOULD GO TO THE CITY TO GET A BETTER JOB.	MALIGAIMEDU	2	7	5	2	7
	VELLAPAKKAM	6	4	1	0	3
	KKV	3	9	2	0	3
I WOULD TRY TO RAISE MONEY TO SEND MY CHILD TO A WEEK-LONG COMPUTER CAMP IF IT WERE IN THE AREA.	COMBINED VILLAGES	4	15	18	5	12
	MALIGAIMEDU	3	10	3	0	7
	VELLAPAKKAM	1	2	7	2	2
I WISH LOCAL GOVERNMENT WOULD SPEND MORE ON INTERNET CONNECTIONS AND SERVICES EVEN IF WE LOSE EXISTING SERVICES.	KKV	0	3	8	3	3
	COMBINED VILLAGES	8	26	9	0	12
	MALIGAIMEDU	6	6	4	0	7
I WISH LOCAL GOVERNMENT WOULD SPEND MORE ON INTERNET CONNECTIONS AND SERVICES EVEN IF WE LOSE EXISTING SERVICES.	VELLAPAKKAM	2	8	3	0	2
	KKV	0	12	2	0	3
	COMBINED VILLAGES	18	21	10	2	4
I WISH LOCAL GOVERNMENT WOULD SPEND MORE ON INTERNET CONNECTIONS AND SERVICES EVEN IF WE LOSE EXISTING SERVICES.	MALIGAIMEDU	7	6	8	1	1
	VELLAPAKKAM	4	7	2	1	1
	KKV	7	8	0	0	2
I WISH LOCAL GOVERNMENT WOULD SPEND MORE ON INTERNET CONNECTIONS AND SERVICES EVEN IF WE LOSE EXISTING SERVICES.	COMBINED VILLAGES	16	27	2	2	8
	MALIGAIMEDU	5	11	1	1	5
	VELLAPAKKAM	7	5	1	0	2
I WISH LOCAL GOVERNMENT WOULD SPEND MORE ON INTERNET CONNECTIONS AND SERVICES EVEN IF WE LOSE EXISTING SERVICES.	KKV	4	11	0	1	1

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