Drishtee Pvt. Ltd: Case Study in Punavali

The dusty road that leads to Punavali is like countless others linking clusters villages in Bundelkhand, or for that matter India itself. Gazing out the window of an ancient van, Sergio found himself thinking it was not unlike parts of his homeland in Mexico - small homes inhabited by impoverished, yet smiling faces. The arid environment could almost qualify as desert, he observed, yet amazingly the majority of the region's inhabitants link their livelihoods to farming. His Glab team members, Amir, Nathan, and Prabhat, bounced along with him towards their destination. They carried with them several handheld computers and a vague notion of attempting to see how handheld devices could be coupled with a rural kiosk. No one knew what to expect upon arrival in Punavali, but all eagerly anticipated a conclusion to this uncomfortable ride.

At first glance there seemed to be nothing to distinguish Punavali from similar villages serving as the home for a few thousand Indians. As they soon learned, the caste system was viciously entrenched into the social fabric of village life and less than 1,000 villagers were even somewhat literate. In fact, many here lived a hand-to-mouth existence devoid of even a semblance of 'disposable income'. Walking down Punavali’s central dirt road, it was hard for the team to distinguish what century they were in - until they stopped at the Parmar sisters' village 'cyber-cafe'...

Rajmani (23), Madhavi (21), and Preeti (19) had been in business together for just over a year. Their father, with a degree in healthcare, was a relatively well-off village landlord and kept his family in high standing within the community. Although almost all of the women their age were married and having children, the Parmar sisters were able to leverage their family's position within the village to postpone marriage with entrepreneurship.

It hadn't been easy they assured the team, speaking through Prabhat, whose fluency in Hindi was proving invaluable. In order to actualize their kiosk business, the three sisters had to convince their father to cover an initial investment of 15,000 Rs (US $300) and to give up the front room in their house for the enterprise. The 15,000 Rs did not even account for half of the total hardware cost, but Rajmani, the business mind of the sisters,

*Glab team, Sergio Delgado, Nathan Eagle, Amir Hasson and Prabhat Sinha, prepared this case as the basis for class discussion rather than illustrate either effective or ineffective handling of an administrative situation.*
was able to negotiate their hardware provider to accept the down payment in addition to 20% of the kiosk's monthly revenue on a permanent basis.

The year 2002 had begun well for the sisters, Prabhat explained to the rest of the team. Several families had signed their children up for a five-month computer introductory course, each paying a total of 1,500 Rs (US $30). Yet business had not always been so good. During the last months of 2000, the business looked like it would collapse underneath them.

Complete with a power regulator, two desktop computers and a color printer, the 60,000 Rs hardware was identical to that of traditional cyber cafe, yet the business initially attracted no clientele. The Parmar sisters offered a full suite of connectivity and educational services tailored specifically towards the needs of their own community, but almost no one from the village was coming even to look at the new enterprise. Even after offering the services for free on a trial basis, virtually none of their neighbors were tempted into the kiosk.

The young entrepreneurs recounted their frustration to the Glab team standing outside their home overlooking the Punavali. Close to admitting failure and returning the hardware, in desperation they began to do something that had before been unheard of in the village. The three upper-caste sisters descended into the village and started dialoguing with everyone about reasons why they were not coming to the kiosk. It was uncovered that because of the sisters' elite caste, the majority of the townspeople did not feel comfortable even sitting beside them. The strict caste system was so entrenched that it had never occurred to the villagers that the young women might actually want someone of lower social class to enter into their home! Preeti spent the next few weeks doing 'marketing' - sitting with her potential customers in their own homes chatting about the services she could offer them at her kiosk. But even more important than advertising these services, by spending her time conversing with people of lower caste, Preeti, as a female of the highest caste, began to undo the centuries of social hierarchy and in the process saved her business.

By the beginning of 2001, villagers had started trickling into the kiosk. After the sisters gave personal invitations to all members of their community, the trickle increased into a flow of people lined up to use the two computers. Farmers came in to check on crop prices or download government application forms. Some of the more courageous women started peeking their heads into the room and asked about classes for their children and or even started surfing the web themselves. Typically the sisters charged their customers 5 to 60 Rs for internet access. Religious and Bollywood\(^1\) sites generally dominated, although at times people came in to look at exotic tourist locations - virtual tours of Goa became popular. Preeti began spending some of her evenings online in chat rooms - typing anglocized Hindi with other native speakers from all over the world. There she met a doctor living in Canada who gave her a remedy for her acne problem that she shared with her friends. And thanks to another doctor who was online in Mumbai, Preeti

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\(^1\) The equivalent to Hollywood in India.
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was able to give her father the information he needed to save a villager with a kidney problem.

As the team stood outside the kiosk and Prabhat began unraveling what the young women were recounting, something perplexed him. The only customers he could see at the kiosk were children - copying and pasting red sports cars into PowerPoint. This observation brought downtrodden looks to the faces of sisters. The team soon learned that although the kiosk had one of the six phone lines in the village, the phone system connecting Punavali had been out of order for some time. Yet the lack of connectivity hadn't overcome the determined entrepreneurs. By teaching computer courses to the village children they were able to maintain monthly revenue at around 3000 Rs (US $60) while hoping the connectivity would be restored by March.

Prabhat suppressed a laugh as he saw one boy surreptitiously grab the computer mouse and start up the Indian version of the computer game of "Who Wants to be a Millionaire?" while the other boy using the computer had his back turned. A small skirmish ensued to as the two tried to gain control of the keyboard. Formal classes, Madhavi explained, are taught to kids on standard Microsoft Office tools, and are billed a sum between 200-300 Rs (5-10 $ US) each month. Other software training classes, such as FoxPro, are offered to the adult population for a slightly higher rate, but have been much less popular.

With a fairly good idea of how their business operated, it was time for the team to get to work. Nathan took out one of their iPaq handheld computers enclosed in a protective red case and an inexpensive digital camera. Through Prabhat he began to give an elementary introduction to the handheld, but was pleasantly surprised to see Preeti pick it up and after some initial problems with the stylus, begin to expertly use the device. Nathan quickly zipped through the basics and started listing types features. Speaking of the device as a tool, the MIT Media Lab student elaborated on the audio recorder, the compact flash reader, image viewer and notepad software. It was Rajmani's turn to surprise him. Quickly she realized there could be many additional services she and her sisters could provide with the device. She recounted one of the services to Prabhat: the local gynecologist was a male and the women of the village always hated going to them with any related problem. The embarrassment speaking of such private things to a male was simply unthinkable - but Rajmani swiftly pointed out that they would not mind as much telling herself with an iPaq. She could then bring the voices of the women to the gynecologist and return with his recommendations.

Amir smiled to himself. He had known that despite all the brainstorming they had done in Cambridge, the real applications for the handheld computer would only show themselves once it was actually brought to the rural villages. In that instant the trip had become a success. Other potential applications where brought forth by the sisters and group started to get excited. The business savvy Rajmani was quick to point out that 280 of the 500 households had television in their homes and extrapolating the statistic as indicative of technology adoption, she thought that people would be quite comfortable with the handheld. That was good enough for the Glab team. With Preeti and Rajmani leading the
way, they set off down towards the village to see for themselves the reactions to the handheld computer and camera.

A family who was one of the kiosk's first customers inhabited the first house they came to. Preeti led the conversation with the woman of the household, Sangeeta - first expertly showing her what Preeti herself had only learned a few minutes before, and then handing the handheld computer over to let Sangeeta operate it. After a few handwritten notes had been written and a voice mail was recorded for friend elsewhere in the village, the digital camera that Preeti was carrying captured Sangeeta's attention. Preeti expertly took a photograph of Sangeeta and her sister and removed the compact flash card from the camera and placed it into the handheld computer, just as she had been shown. Within seconds Sangeeta was looking at her portrait on the screen of the iPaq and laughing. It took a couple more photographs before Sangeeta was satisfied with her picture and then willing to purchase a printed copy. A price of 40 Rs was agreed upon for the photograph, and the team left the house feeling exhilarated. They had just started one of the first door-to-door digital delivery services in the country!

What struck Sergio as even more interesting was the conversation Sangeeta and Preeti had before leaving. From Prabhat's recount on the way to the next home, Sangeeta had a son who was working in Delhi. Due to the expensive of phone conversation (over 50 Rs/min), she did not get to speak with him often - however, he did have an email address. She would love to deliver short voice mails to him. Rajmani could almost hear the money coming in through this new service and bit her lip with regret that their connectivity problem still had yet to be fixed.

The Parmar sisters were no longer an uncommon sight even in the poorest areas of the Punavali, yet when they carried electronic toys and were followed by foreigners, all the village children knew that something out of the ordinary was occurring. Before long the group of six going house to house with the devices had turned into a group of twenty. Amir kept the village kids entertained while Preeti spoke with different people about the potential services the sisters would begin to offer. Many more photographs were taken and ordered. The parade continued through the village until it was too dark to for the camera to take satisfactory pictures.

Sergio was ready to head back - he had forgotten how quickly village houses get cold when the sun goes down, and had not brought an extra coat. However before they left, Prabhat discussed with the sisters what the team wanted from them in exchange for the new hardware. For the next thirty days the sisters would make careful record of the exchanges they had with the handheld devices and how much money they were able to charge for them. They would also make an effort to deliver these services to the outskirts of Punavali, where they have had little luck attracting people to walk over five kilometers to their kiosk. Each week one of the sisters would make the 40 km ride into the Jonshi, the nearest town with working phones lines and an internet shop. They would email the team these records for their final report and talk about the week's events.
As Sergio, Prabhat, Amir and Nathan took the bumpy road back to Jonsi themselves they reflected on their productive day. Sergio shook his head as they past the last of the 500 houses that made up Punavali, again looking at the water starved ground and knowing that a good fraction of the people here were struggling below the poverty line. If a computer kiosk could succeed here, he thought, then the 700 million people living in rural India might be profitable market for information technology after all!
Appendix I.
Excerpts from 'handheld entrepreneur' Bipin Dubey’s field report PDA & Digital Camera awareness report from Punavali, Nayakhera, Gwera, Kotkhera, Domagor, Dhikoli (Jhansi):

We went around to all the above said villages with the PDA & digital camera and showed it to all the people and explained the benefits and uses to the people. The main reactions of the people are enumerated below:

-- Most of the people had heard about a computer but had never seen one leave alone use it.
-- We explained the different uses of a computer like voice mails, emails, photography etc., but the people did not evince much interest in anything of them except for photography.
-- The people fully understood when we explained that a mail can be sent with a single click, but their contention was that how was a person on the other end supposed to know that they have received an email. Also, that for accessing an email the person on the other end also has to spend money, whereas on the other hand a normal postcard reaches the person directly at his/her residence.
-- The main need of farmers is Mandi rates. They also want to know information on crop management, pesticides, availability of seeds etc.
-- Villagers want to know information on health related issues like the prevention of TB, arthritis, kidney stones etc.
-- The villagers are interested in using the PDA with the digital camera to get their own pictures and then wouldn’t mind paying for a print out of their photographs.
-- In Nayakhera and Dhokoli the villagers were impressed by the concept of emails, but expressed that it did not have a direct bearing or usage in their lives.
Appendix II.
Demographic Information from Punavali

1. Typical source of livelihoods in the village?
The typical sources of livelihood in the village are as follows:
   - Agriculture: 70% (Wheat, Pulses, Groundnut)
   - Construction labour: 10%
   - Livestock rearing: 10%
   - Employed (both govt and pvt): 5%
   - Merchants (shops etc): 5%

2. Average annual income levels? Percentage of disposable income?
The average annual income in the village is around Rs 60,000. The annual savings average is around Rs 5,000. The major expenses for the villagers are on – agriculture, food, health, education of children, transport, festivals etc.

3. Caste breakdown in the village?
The total no of households in the village are 502. The break-up of these are as follows:
   - Upper (highest) castes: 2.7% (13 households)
   - Backward (medium) castes: 70% (350 households)
   - Scheduled (lower) castes: 24.2% (122 households)
   - Scheduled (lowest) tribes: 3.1% (17 households)

4. Region population (number of potential customers).
The total population of the village is 4500

The size of the village is 4sqkms. The village is divided into three parts, namely – Kanchanpur, Pehlapura & Pahadpura.
The average age group of the children studying at the centre at present is 13 – 25 yrs. The approximate number of children in this age group in the village is 1000. The potential customers would be around 1000.
Appendix III.

Financials from the Punavali Kiosk

1. How much do the computers training courses cost & how long do they last?
   There are basically two courses being run here. One course is the course that has been developed by TARAgyan. This is a Basic IT course and it costs Rs 1490. This course is for a period of 6 months. They also run another course for children who cannot afford the Basic IT course. This course covers basics of DOS and basics of windows. This course costs Rs 50 per month and the duration is 3 months.

2. What is the kiosk’s monthly revenue?
   The monthly revenue of the kiosk is in the range of Rs 2000 – 2500. The monthly expenditure for diesel etc is in the range of Rs 300 – 500.

3. How much did they pay for the kiosk?
   The centre is being used by TARAhaat as its R&D centre and hence has paid for all the equipment installed at the centre. In due course of time TARAhaat does expect the kiosk owners to pay for the equipment installed. However, the centre owners pay for all the operating expenses.

4. When is the kiosk phone line going to arrive?
   The phone line was connected in December, but there is no connectivity even if an ISP was available, the transmission is through copper lines and it is very difficult to transfer data. Our experiments with modems have shown that such lines support a data transfer of around 600-800 bits per sec. which is completely unsuitable even for plain text transfer what to talk about the internet.
Appendix IV.

Usage Data from the Punavali Kiosk

Kiosk usage with connectivity:

When the connectivity was available at the kiosk through the VSAT that was provided by HECL, the following were the uses:

-- Farmers used to come to the kiosk to get the mandi (market) rates prevailing in the major mandis. This is used to give them a better bargaining position when they had to go these mandi’s to sell their yield.

-- Farmers used to also access information regarding crops, farming patterns, what pesticides to use etc.

-- People in the village used to access health related information. For e.g. they used to access information on arthritis and stones in the kidney and how to treat them.

-- The village does not have access to newspapers, so the people used to access news related stuff and come to know about whatever is happening around the world.

-- The girls used to access information on treatment of pimples and other such beauty tips using the Internet.

-- The women of the village used to also check out new cooking recipes from the Internet and try them out.

Kiosk without connectivity

Now that the connectivity is not available the basic thrust is on education. As explained earlier, there are two courses being run by the centre. Other than this they play a movie once in a while and charge people at the rate of Rs 5 per head. They also scan photographs and give a print out of the photos, the rate is dependent on the size, but the minimum is Rs 20.
Appendix V.
Photographs from the first field study

Preeti showing off the voice playback to Sangeeta and family
Preeti taking a portrait of a father and his two sons
The three sisters: Preeti, Rajmani, and Madhavi