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TITLE PAGE

Information Poverty = Rural Poverty?

Computers as the New Knowledge Brokers in Rural India

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Short Bio

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Introduction

The conventional 'village' is being digitalized. In the last decade, India has proudly embraced its new image as the world's Silicon Valley and back-office (and arguably front office) for global business. This momentum is being driven by information and communication technologies (ICTs); subsequently government policies ambitiously live up to this new found reputation by promising digital change across all sectors, particularly in the rural domain (Aggarwal, 2002). After all, India continues to be an agrarian country despite its new found Silicon Valley status. Central to this effort entails connecting India's 600,000 villages with computers and the net, signaling one of the biggest rural investments for socio-economic mobility. The net is heralded as the new intermediary to knowledge for the villager. Underlying this is the belief that rural poverty has chronically persisted due to information poverty. For instance, farmers are perceived as being poor due to their limited access to critical knowledge on food prices, fertilizers and market demands for agricultural goods; rural healthcare practitioners are looked upon as lagging behind in the latest knowledge on diagnostics and treatment; and rural students are seen as digital non-natives in this virtual and information economy.

This paper critically assesses this premise on the information gap being the key barrier to transformative and positive change in villages in India. Drawing on eight months of ethnographic fieldwork in rural Almora in the Central Himalayas, this paper investigates the role of information through new media technologies in the rural 1) agricultural 2) healthcare and 3) education sector. What is revealed is that there is an urgent need to critique the causal

relationship between information and rural poverty and reframe the role of digital technologies in village life. It is seen that the issue of poverty is less about the dearth of information but rather the lack of trust in the intermediaries in existence. Further, it becomes apparent that information that has utility is far less pursued online compared to knowledge that is more social and leisure oriented. Also, we need to problematize what constitutes as local, indigenous and rural knowledge as its boundaries are more porous and cosmopolitan in nature. Lastly, digital mediums and its information does not necessarily replace older resources but adds to the rural techno-social ecology and sometimes even strengthens current agents, agencies and institutions.

The rural context: Almora

Uttarakhand (previously called Uttaranchal) in Central Himalayas has become synonymous with spiritual exploration and learning (Arora, 2010). Thousands of pilgrims flock yearly to this rural area in search of spiritual guidance as evident from the smattering of ashrams around this area. In fact, it has been made famous by Swami Vivekananda (arguably the first of the Hindu missionaries in the West) and the Lonely Planet, as it claims to have some of the best sunrises and sunsets in the Himalayan region. This location has also earned the title as the cultural heartbeat of the North; Mahatma Gandhi has reminisced about these hills, "…after having been nearly three weeks in Almora Hills, I am more than ever amazed why our people need go in Europe in search of health" (1971, p.4). Uma Thurman spent much of her childhood days here. The first British Nobel Laureate (in medicine) Sir Ronald Ross was born here and artistic giants such as D. H Lawrence, Bob Dylan, Cat Stevens and Timothy Leary, the father of the hippie movement, marked these hills with their extended stays. To this day, Cranks Ridge or hippie hill,

about twenty minutes from Almora town, continues to draw foreigners who not just come to visit but often settle down and intermarry with the locals.

However, this is also one of the poorest regions in India, looked upon as disadvantaged and marginalized and officially demarcated as 'backward' (Sati & Sati, 2000). The town itself has around 56,000 people. Hindus make up the bulk of its population, where predominantly Brahmins and Rajputs prevail, besides a small subset of tribal non-caste people or Bhotiyas (Negi, 1995). Interestingly, there is no indigenous trader caste, a fact that sets this culture apart from those of the plains. However, all Uttarakhand castes can and do engage in commerce. In Almora villages, three castes prevail: thakurs (noble lords), brahmins (priestly caste), and harijans (lower caste). Males number 294,984, and constitute roughly 47 per cent of the population and females number 337,882 or 53 per cent of the population. Also, there is a migration rate of 60 per cent to the neighboring States of Uttar Pradesh and Punjab, primarily due to a high rate of unemployment (Sati & Sati, 2000). This situation is exacerbated by an average literacy rate of 73 per cent (higher than the national average of 59.5 per cent), with 89 per cent of the males and 60 per cent of females deemed as literate. Unlike other migratory patterns, contribution through remittances to the economy is marginal, making perhaps 5-7 per cent of the income. About 90 per cent of the population is engaged in subsistence agriculture and it is a commonly known fact that women here are the backbone of this agrarian economy. 60 per cent of the rural population lives in areas that are more than five kilometers from the town, where access to most of the markets, hospitals, colleges and other services reside. Yet 70 per cent of people make the effort to visit the town at least once per month for a range of services, including medical, pension, employment and education, to name a few.

With the formation of Uttarakhand as a new state in 2000 (carved out of Uttar Pradesh), an influx of capital has come towards this region to develop it particularly through technology, earning the title of an "e-readiness" state (OECD, 2006). In the last three years, the new State of Uttarakhand has sought to reinvent itself through high-end technologies, putting itself on the fast track to 'e-readiness.' This is an extension of the ICT Indian Mission 2007 policy that aims to connect 600,000 villages across India through government cybercafés or what they term as 'communication information centers.' On the three fronts that this paper addresses, namely agricultural, medical and education, there have been some significant digital interventions. On the agricultural front, cybercafés serve as agri-clinics, where ideally farmers can log onto online portals to check crop prices, new market information, connect with other cooperatives and auction their goods in a more competitive market. On the medical front, a health worker can enter the symptoms of a patient into an online medical program (designed by a private US based company) which computes this data and offers a diagnosis and treatment for the rural patient. And on the educational front, students are expected to use the net to help in their school assignments and gain access to more global knowledge. What is common here is that the conventional intermediaries – the agricultural market dealer, the teacher and the doctor are challenged and/or circumvented here. This is significant as there is a dearth of qualified doctors and teachers and there is also deep corruption with the agricultural middlemen, accused of exploiting the farmers and thereby keeping them in a chronic state of poverty. Through action research, interviews, and focus group for informal discussions over a period of eight months, there is an aim to unravel what is the role of computers and the net in the process of knowledge

acquisition, what kinds of information are being accessed and what is its impact on this populace?

Digitalization within the agricultural, healthcare and education sector in rural Almora

1. *A farmers dream: A virtual pathway to the mainstream market?*

Popularly argued is that primitive agricultural techniques, combined with a lack of knowledge and appropriate technology has exacerbated the farmers plight (Agrawal, Shah, & Jamal, 2007). This is in alignment with the modernization perspective that has grasped policy makers post-independence to arguably the current times. There is a focus on converting "primitive mindsets" and rural "ignorance" through the "right" knowledge for socio-economic mobility (p.12). This has led to an initiative funded by UNDP in partnership with IIT Roorkee, a top technology institute in this region, to establish an online portal 'Uttara' for farmers as a one-stop-shop for information and services. Their stated aim is to enhance farmer efficiency and productivity through IT, empowerment through information exchange amongst stakeholders, increase demand for agri-clinics, and create a customer satisfaction index of 91.5 per cent (NIC, 2005).

Hence, the kinds of information that is made available through the Uttara portal for farmers include crop planning, husbandry, skills development, capacity building and access to virtual markets. More specifically, such an agricultural e-bank is meant to include detailed information on the following: geography of roads and location maps, agricultural department information, weather reports, mandi or government market rates, soil and seeds, crop life cycles, poultry, dairy and fishery techniques, horticulture and floriculture schemes, banking and insurance options, NGO details, new projects, and agricultural statistics. Also, A Digital Library for Indian

Farmers (DLIF) using open source software has been launched by the G.B Pant University of Agriculture and Technology. This scheme digitalizes texts on agriculture for farmers in multiple languages with an online audio-video component (Malhan & Rao, 2007).

However, through ethnographic investigations, it was found that these sites required constant maintenance in staying up to date. Farmers complained that the information on these sites was often outdated by at least a year or two (Arora, 2010). This digital marketplace was inactive and the clients felt there were more reliable ways of getting information than from this portal. It became a matter of trust on whether these virtual sites offered up-to-date knowledge. In fact, this digital portal is designed as a top-down model for the information flow from the State and its elite actors to the supposed beneficiaries, the rural farmers. This negates common understandings of online practices which gives credence to the 'wisdom of the crowds' in constructing information online (Keen, 2007). It fails to capitalize on user interactivity and collective intelligence, the key resources in this new media world which facilitates a dynamic, diverse, and a richer data base (Jenkins, 2006; Shirky, 2008; Surowiecki, 2004). In fact, current peer-producing content platforms online such as Wikipedia is proof that this is the pathway to a sustainable knowledge based model. Sadly, the old international development thinking seeps into contemporary digital design and implementation which instills one way information channels and flows, thereby repeating past failings. What is currently the lifeblood of the Web 2.0 platform– peer-collaboration, social intelligence, and mass participation has been surprisingly sidelined, and hence is of no surprise that these portals are digital graveyards.

2. *Rural doctors know best (with a little help from an electronic friend)*

I investigated the usage of RightChoice, a software suite designed especially for the healthcare needs of developing countries (Arora, 2011; 2012). It is pioneered and owned by an American private medical software company, backed by significant venture capital funding. The unique selling point of this product is its capacity to be used by even a minimally trained healthcare worker in the creation of an accurate diagnosis and treatment of medical conditions. The idea is that the rural patient shares his/her symptoms and these are entered into the digital system, resulting in a quality diagnosis and recommended treatment. The premise of this digital medical broker is that the current rural healthcare system is failing particularly due to its lack of qualified medical practitioners in rural areas. However, in examining the design and usage of this software, certain critical issues surface. While undoubtedly it is essential to have knowledgeable healthcare workers to service this clientele, the faith in this digital intermediary to fix these issues is indeed naïve.

What was discovered was that these digital intermediaries are extensions of the surrounding medical culture. For instance, for this tool to work effectively, it depends on an honest and complete reporting of symptoms, backgrounds and contexts. In our encounters with the villagers, most people claimed to not have any ailments. There are several taboos such as reporting on sexual symptoms and habits such as drinking alcohol or chewing tobacco, especially amongst women. Also, most villagers are vague about their ages and their children's ages. Parents are for the most part unaware of the immunizations given to their children. Further, in reporting symptoms, this digital platform is designed along western benchmarks of diseases and symptom reporting. However, in practice, we found that most of the typical categories were left blank and

in fact, villagers reported their health problems in ways that were not easily computable. For instance, several villagers reported a unique series of symptoms such as combinations of 'hole in the uterus, doesn't feel hungry, swelling in intestine, faint,' 'waist pain, right arm pain, migraine, frequent fever, burning palm & foot, white dots on chest' and the like. Overall, the common practice here is to take several painkillers, coffee to suppress hunger, follow local shaman suggestions, intake of local herbs, and go to the doctor for primarily emergencies.

This is attributed to larger issues of poverty. Also, the system itself is seen as often corrupt, fostering a black market in the drug trade where pharmaceuticals earmarked for free by the government for the rural population are circulated into the market at a price. Often villagers are given expired drugs that can create further damage to their system. For instance, we found usage of sulphur as a recommended drug, a drug that is banned since the 1970s. Lastly, even if this digital tool is shown to work, most villagers cannot afford these recommended treatments and instead they resort to the quick fix- the painkiller to see them through. Hence, the role of information here is to be able to get the right treatment to the rural patient but unfortunately, this is a small part of a larger institutional practice of the medical industry where access to cheap and quality drugs is a challenge, and socio-cultural pressures compel rural patients to lie repeatedly about their symptoms, making this diagnostics ineffective.

3. *No rural child should be left behind in this digital native world*

I volunteered to work for free at a popular cybercafé where students frequently came to do their school assignments (Arora, 2010, 2010a, 2010b). These cybercafés served as after school centers for this clientele. For less than twenty rupees [50 cents], students came here to complete their

school work ranging from accessing information/visuals for school projects, typing their thesis (in primarily English), discussing their projects to applying for further education online. For an extra five rupees, they were provided with an assistant to aid them in their tasks. What unraveled was activities that can be perceived as plagiarism as students went about actively cutting and pasting texts and overriding copyright, manipulating information and making it theirs, and disguising ownership through collaborative deception.

Also, students from the art history program at a local university were seen browsing through Google images for their school project on Western art. Images of cowboy paintings by Chinese artists were demarcated as Western painting. While Mona Lisa was selected, Picasso's Les demoiselles d'Avignon was not. Native Indian imagery was favored due to their color and won a place in the Western art portfolio. This kind of peripheral engagement with global knowledge was pervasive in this digital knowledge acquisition and reinforced by their peers. Lastly, much of the activity here was focused more on leisure and social oriented purposes: inhabiting Orkut, the popular social network site, yahoo online chats with their friends, dating sites, photo-shopping popular film stars with themselves, downloading Bollywood songs and movies and playing video games. In fact, these cybercafés were reported by the owners to survive because of leisure and not so much the utilitarian means of digital usage.

Conclusion: Re-situating the role of digital tools and information in the modern village context

Knowledge is power or so the common adage goes. Yet information by itself is not the key driver to enhancing village life as we see in the case of the digital diagnostic tool in healthcare where institutional practices of corruption, the lack of access to drugs and the lifestyle of poverty

fundamentally reduces the role it plays in this process. Further, socio-cultural factors play a key part in what kinds of information is constructed and circulated as we see in the misinformation given on topics of taboo for healthcare records. This brings to the surface the actors in charge of the shaping of this information. When content is manufactured in isolation by elite/State actors, away from the actual user of that content, there is a high likelihood that this information will be less useful and dynamic to the needs of the community of users. In fact, as we have seen with the farmers, top down processes of information construction are archaic and negating of contemporary understandings of knowledge construction that capitalizes on peer production and collective intelligence. Lastly, what constitutes as 'relevant' knowledge is mired with preconceptions based on institutional expectations and pressures such as an educational curriculum but often, in practice, relevance is in the eye of the beholder. Hence, students as we see privilege social gossip, knowledge on popular films and songs and technical know-how of PhotoShop over perhaps serious news. Also, the localization of global knowledge such as demarcating cowboy images as Western art signals the need for a more critical perspective on the assumed causal linkage between Net access and global knowledge. Overall, the power of knowledge is contingent on institutional, cultural, political and socio-economic factors such as outlined in the cases above, highlighting that access and usage of the Net by itself is not the panacea for village transformation. That said, these digital realms allows for new possibilities of village regeneration and expression, and not necessarily in line with utilitarian expectations.

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