From Agri-clinics to FarmerNet: applying mobile phones and the internet to support rural farmers

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Rural farmers are producers and also consumers in the food security equation. They are part of the 4 billion 'bottom of the pyramid' global community who earn less than 1500$US a year. Their actions - production, harvest and marketing - are critical determinants of the global food security. Information plays a critical role at every stage of this action chain.

In the modern world, information transfer to and from the rural farmer hinges upon the tools of Information Communication Technologies (ICT) where telecentres and mobile phone applications constitute major part.

Role of telecentres

Since the early 1990s, telecentres have been experimented with as a model to provide ICT opportunities to rural communities, including farmers (Barbara & Foote, 2007). Sarvodaya-Fusion[2] had attempted to disembody the research knowledge from state run research institutions, through three year long Agri-clinic project[3], to support farmers' decision making over pest & disease problems (Fusion, Agri-clinic Progress Report, 2008). The Pallitathya (telecentre) project of D.Net[4], Bangladesh had been providing services to rural farmers mobilizing mobile ladies – lady paddling the bicycle to reach out to village community - with supplementary back up services from information helpdesks (Raihan et.al., 2005).

Telecentres act as a shared space, located in rural landscapes. Thus enables the rural community to interact with digital equipment, usually with the assistance of the trained staff. There are multiple models in terms of information being channeled from telecentres to the rural communities. Direct community interaction with telecentres is the most common form. Although such interaction is widely popular with the children and young people of the target populations, many different models have emerged to build the missing link: the interaction of rural adult communities. Intermediaries such as the 'mobile lady' of D.Net, Bangladesh and the 'human interfaces' of Sarvodaya-Fusion Sri

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[2] Sarvodaya – Fusion (www.fusion.lk) is the ICT for Development arm of Sarvodaya (www.sarvodaya.org), the non-governmental development organization in Sri Lanka.

[3] Sarvodaya-Fusion had implemented two Agri-clinics, from 2005- 2008, targeting farmers in 20 villages in two districts of Sri Lanka. In close collaboration with Department of Agriculture, Ministry of Agriculture, project had developed and distributed knowledge material on pest & disease information to supplement farmer's decision making.

[4] D.Net – (http://www.dnet-bangladesh.org/index.php) Development Research Network is a non-governmental research organization operating in Bangladesh. Pallitathya is a project carried out by D.Net since 2003 to support rural farmers.

Lanka are just a few examples. The Village Information Centre (VIC) is another model where VICs form an intermediary information repository as libraries that are networked with telecentres.

Through such delivery channels, explicit yet complex knowledge materials are transformed into demand driven, farmer friendly simple knowledge materials, which help the farmers decision making.

Impact

Impact assessments of these telecentre interventions are still at an early stage of development. Hence, the exact impact created on rural farmer is subject to debate. However, emerging impact assessment models such as 'theory of change' adapted by Sarvodaya-Fusion help to gather approximate assessment.

The 'Theory of change' is an indicator based model, which assesses how an individual or a community travels through the journey of e-empowerment, from the first time 'exposure' to ICT, through 'skill development' to 'application' of ICT to their development work (Fusion, 2009).

One case study of a remote village (Divirumgama of Badulla district) with 2092 families, 'exposed' to ICT in 2005 during a village development (*Shramadana*) camp, was 'motivated' to request further ICT opportunities through Sarvodaya coordination centers. The journey continued by soliciting basic ICT training for two youth leaders in the village, and receiving the first ever laptop donation to the village society. By 2009, the village society decided to purchase a computer, utilizing collective village savings and helping to provide ICT training to other village youths ('application' of ICT).

Sarvodaya estimates, such community engagements in one village, on average, leverage 5 times the resources invested initially by the program from US$60 (per village) to US$360 worth contributions, over a five year period. Estimated 205,700 people had received exposure to ICT in 121 villages in 17 districts in Sri Lanka during one year (2007 – 2008) (Fusion, 2009). Such progress indicates the magnitude of penetration of ICT into rural communities and their collective willingness to accept and invest into potential opportunities.

Problem

Nevertheless, the capability of such telecentre based ICT interventions to satisfy farmer-targeted information needs is questionable especially from the perspective of scalability and economic sustainability of the operation.

Due to many hitherto unidentified reasons, the majority of farmers remains less excited about knowledge based interventions of telecentres, though market based interventions such as e-Choupal of India seem popular. The overall farmer interaction was as low as 5% comparing to 95% of children and youth, in Sarvodaya-Fusion operation (Fusion, 2009). In contrast, eChoupal of India, has served 3.5 million farmers in 31,000 villages through 5200 telecentres, in 2008 (Singh, 2009). Operation targets rural farmer trading, in contrast to the knowledge transfer models of Sarvodaya-Fusion and D.Net. As per the learning of Agri-clinic project, pest & disease information are time sensitive and location specific. They required the complete packaging of correct diagnosis, identification of treatments and access to treatments. Project interventions were limited to the diagnosis part and thus could not provide the complete package. Disease symptoms were recognized and directed to

the Agriculture department (the state body) but the process of returning the answers to the farmer took about two weeks on average and often it was not a complete answer. Furthermore, the sophistication of technologies such as CDs, e-books tended to alienate farmer interaction.

In Bangladesh, D.Net, Pallitathya (telecentre) project, has gone one step further. There, an especially dedicated mobile lady, supplemented with specialized help-desk support, could provide both diagnosis and access to treatment in one package instantly using mobile phones (Raihan, et. al., 2005). Yet the data indicates relatively low numbers of calls (924 calls over 6 months) that were not convincing enough to build an economically sound, scalable operation (Liyanage, 2009). Such observations raise the question of the economic feasibility and scalability of these knowledge services offered through telecentres.

New hope coming from Mobile phone integration

Steady progress made by the mobile phone industry since 2001 brings new hope to formulate solutions. Such hopes were fueled by the ability of mobile phone to penetrate into the bottom of the pyramid sector. In Sri Lanka, a 23% growth in the use of mobile phones was reported among the bottom of the pyramid communities between 2001 and 2006. In the Philippines and Thailand, the percentage figure stood as high as 60% and 76% by 2006 (Samarajiva, 2007). Research indicates mobile access has somewhat contributed to the improvements of poor lives and supported poverty reduction (Silva & Zainudeen, 2007).

'M-pesa' – the mobile phone base money transfer model is revolutionizing the banking sector in Kenya, especially where traditional banking structures are not wide-spread in the rural landscape (Leishman, 2009). Ghana based TradeNet is a unique model of mobile phone being applied to rural farmer trading (Bartlett & Kutsoati, 2008).

Learning from these emerging models, Sarvodaya-Fusion launched FarmerNet[5], an online mobile trading platform in mid 2009 (Goonewardana, 2009). The model specifically targets the micro-finance beneficiary rural farmers in Sri Lanka. The majority of these farmers are constrained by their limited access to markets, and therefore do not receive a reasonable price advantage. FarmerNet employs a Spot Trading platform, which tends automatically to match the traders and farmers, and inform them via SMS texts. The model is anticipated to provide more trading choices for rural farmer.

Through the integration of mobile phone technology with web technologies, FarmerNet has made an attempt to make the process speedier and cater to the farmer directly. So, it intends to bypass the farmers' reluctance to interact with telecentres and also to bypass the over-dependency on intermediaries. However, the system is targeting market information instead of pest and disease information, demand volume of which is expected to enable a sound business model.

FarmerNet is designed to work in concert with a network of telecentres in the country. Thus, mobile phone technology would be used as a technology tool to leverage the overall farmer interaction with telecentres. However, the wider community acceptance of the model is yet to be tested.

[5] FarmerNet – www.farmer.lk is a project funded by ICTA of Sri Lanka, and launched by Sarvodaya-Fusion, in collaboration with SEEDS (www.seeds.lk) and Sarvodaya-UK.

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