Information and communication technology- Heading towards Rural India

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Abstract

The advent of modern information and communication technologies (ICTs) such as telephony or the Internet holds unprecedented opportunities for rural development. Researchers, policymakers and entrepreneurs alike frequently claim that ICTs represent one of the most powerful tools in the struggle against poverty. Modern information and communications technologies (ICTs) and web based marketing of agricultural produce hold great promise for the socio-economic development of rural hinterlands in India. However, if they are to serve the `unserved' and spawn innovation at grass root level their implementation must be carefully localized. Most experts agree to it that the Web will have a great impact on the way rural marketing would be conducted in the future, yet there has been little research towards exploring the effectiveness of the provision of agriculture-related and rural marketing information in the electronic form. This effort is made to study few popular agricultural websites in some key areas of information provision maintained by government departments and agencies, private profit-motivated as well as non-governmental organizations (NGOs), and to identify the barriers to communication. The study will be useful for developing better electronic commerce networks and e-commerce trading platforms for rural marketing.

1. Introduction

Agriculture-related and rural marketing information in the electronic form is available in abundance. ICTs can be used as a powerful tool to develop rural India. There are a number of ways in which ICTs may serve the development process. For instance rural entrepreneurs can benefit because ICTs help to improve access to markets or supply chains and provide a broader base for decision-making, thus making risk more calculable. Moreover, many local communities have experienced that ICTs have increased bottom-up participation in the governance processes and may expand the reach and accessibility of government services and public infrastructure. In Andhra Pradesh, Internet-based Integrated Citizen Service Centers allow for electronic bill payment, issuing of certificates, permits and licenses; or access to public information. The electronic village project of M. S. Swaminathan Research Foundation (MSSRF) in Pondicherry received the Stockholm award for its promise. However, there is as yet little systematic empirical evidence of the supposed enormous 'developmental' impacts of ICTs. Moreover, in many – especially rural – areas, the private sector is yet to invest significantly in ICT experiments (except for a few like ITC or Tata Chemicals) because of lack of experience with rural markets or low purchasing power of the local population. This means that, if ICT access is to be expanded, public money will have to be spent – which in turn means that there is important trade-offs to be considered. In many areas, there are serious questions about how much money policymakers should spare for the build-up of ICTs instead of investing further in potable water supply, roads, electricity or other physical infrastructure projects. Given such trade-offs, there is a need to identify which kinds of ICT access deliver the best value for money, and how the limited resources that can be spent on it can be made to best suit the particular needs of rural India. A number of 'models' have so far been tried.

2. Various Agricultural Information Portals

A. Digitalmandi (ITC promoted)

It offers the farmers all the information they need to enhance farm productivity by using better technology, improve farm produce price realization and cut transaction costs. Farmers can access latest local and global information on weather, scientific farming practices as well as market prices at the village itself through this Bilingual web portal. The four-point program to serve the agro community of India will be:

1. To create an exchange for Knowledge of farm practices
2. Accurate information for optimizing operations
3. Pricing information that enables lower input prices
4. Higher yields for outputs
5. Delivered through "user oriented design approach"

Another section intends to bring the new inventions and discoveries in farming practices as quickly to the farmers as possible. Any scientist, agricultural farm-practices expert, agriculturist or trader who is concerned with the welfare of farmers and wants to contribute to this section can submit his/her article through this section. Reviews, market events, recommended farm practices and even personal opinions are welcome. The best articles will also be featured in our selected articles section. You will need to register separately to be authorized to contribute. What we need from you are authentic contributions preferably

supported by authentic references. So, take your pen and share your ideas and knowledge and we will ensure that your views reach the whole farming community.

B. Tarahaat (Graphics)

Tarahaat utilizes fine graphics and animations to convey general introductory information about their services. The site also uses voice effectively for dissemination of information. However, the use of animation and video is very limited considering the huge potential it has even for the purpose of reading out textual information. The information on the site is divided in to following three sections:

1. Read
Information is power. Read about topics like health, the law that governs you, your rights, E-governance, welfare schemes, livelihood and more.

2. Do
TARAhaat brings services you need. Talk to our experts in various fields without traveling all the way to them. Take your child for his/her next dose of vaccination by checking the schedule provided here. Communicate with your dear and near ones in your own language. TARAhaat's E-mail service supports 11 Indian languages! Find out more.

3. Find
Got something to sell? Need to know the commodity prices at a Mandi close to you? Search our database for many services ranging from the availability of medical practitioners at the local PHC to Bus/ train timings and more.

C. Agmarknet (Government Promoted)
http://www.agmarknet.nic.in/
The home page links you to the various Ministries of Government catering to different needs of rural India.

1. State Agricultural Marketing Boards/Directorates Bihar State Agricultural Marketing Board Karnataka State Agricultural Marketing Board Krishi Maratavahini (Karnataka State Daily Market Price Information) Madhya Pradesh State Agricultural Marketing Board Maharashtra State Agricultural Marketing Board, Pune Meghayala State Agricultural Marketing Board Orissa State Agricultural Marketing Board, Bhubaneswar Punjab State Marketing Board Rajasthan State Marketing Board

2. Ministry of food processing industries Links you to the information provided by Government of India related to Ministry of food processing industries.

3. Ministry of Commerce and Industry Department of Commerce Department of Industrial Policy & Promotion Directorate General of Commercial Intelligence and Statistics Office of the Economic Adviser Directorate General of Foreign Trade Department of Explosives Directorate General of Supplies & Disposals (DGS&D) Tariff Commission.

4. Department of Consumer Affairs Links you to the information provided by Government of India related to Ministry of Consumer Affairs, Food & Public Distribution.

5. Department of Animal Husbandry & Dairying Links you to the information provided by Government ofIndia related to Ministry of Agriculture (Department ofAnimal Husbandry & Dairying).

6. Directorate of Marketing and Inspection Links you to the information provided by Government of India related to Ministry of Agriculture & Cooperation

7. Agricultural produce markets The Directorate of Marketing and Inspection (DMI) have prioritized about 735 Wholesale Markets, 48 State Agricultural Marketing Boards and Directorates and 27 DMI offices to implement AGMARKNET Scheme.

8. Tradenic Online Market Informatics Division [Mark Info] of National Informatics Centre [NIC] provides value added services overtrade related information for the promotion of trade to and from India. TRADENICONLINE offers a wide range of value added data dissemination services to its members which can be accessed from various parts of the country and overseas using internet connectivity. Linkages are being established with export promotion organizations, commodity boards, regulatory bodies and trade & industry associations for collection and dissemination of value added information.

9. Department of agriculture and cooperation Links you to the information provided by Government of India related to Ministry of Agriculture.

D. Agriwatch

This website provides the SMS facility for message alerts on prices of particular commodities. The home page will provide you with the following links.

Services on Portal	Agriwatch Services
1. Research Report	1. Research Report
2. Market Watch & Prices	2. Agriwatch Portal
3. Agri News Watch	3. SMS Services
4. Exchanges	4. Audio/Visual Services
5. Yellowpages	5. Hindi Trade Weekly
6. Your Store Fronts	6. Agriwatch Monthly
7. Agri Statistics	7. Hindi Farm Weekly
8. Shipping Updates	8. Business Consulting
9. Policy Watch	9. Subscription Rates
10. Weather Watch	10. Trade Promotion Service
11. Buy & Sell Bulletin	11. Your News Release
12. Agri Links	
13. User Services	

http://www.agriwatch.com/

E. Sustainable Access in Rural Internet (SARI) project.

Pathinettangudi some 35 km from Madurai, which presents the look of just another underprivileged village. However, a silent IT revolution is brewing in the tiny hamlet where the illiterate farm workers use webcams, voice mail and e-mail regularly. Similar is the communication technology spread in at least 30 other villages around Pathinettangudi, paving the way for the caste-conscious Melur to become the first cyber taluk in the country? courtesy the Sustainable Access in Rural Internet (SARI) project. Villagers no longer run from pillar to post to get caste, birth and death certificates here. They simply download the application online and forward it through e-mail to the tahsildhar. The acknowledgement is received within hours and the certificate issued in a week. Earlier, people had to shell out at least Rs. 250 to get an income certificate or old age pension. Now, the cost is only Rs. 29, which includes a printout of the e-mail acknowledgement from the tahsildhar. `Public Access Internet Kiosks' have been established in 30 villages under the SARI project in association with the ``n-logue''. This government-public-private-institution partnership program also involves the IIT Chennai, the Massachusetts Institute of Technology and the Harvard University. Even as a good number of youth in Melur Taluk are employed in the Middle East, their dear ones are no longer scared of ISD bills. It's just Rs. 25 an hour to see their wards live on screen through the interactive webcam. This, of course, besides the voice mail, chatting and e-mail. That is not all. The agricultural laborers get their queries clarified online as well, thanks to the Madurai Agriculture College and the Research Institute of the Tamil Nadu Agricultural University which is providing free counseling. The villagers also get close-up color pictures of their eyes examined by specialists in the Aravind Eye Hospital in Madurai and fix up appointments for surgeries. There are plans to provide online train, air and bus ticket booking. A free consultancy on veterinary sciences is also on the anvil. The technology has been developed to provide high speed Internet wireless access to more than 1,000 systems within a radius of 25 km radius. The kiosks have been established by individuals who took the risk of investing Rs. 50,000 in computer and multi-media and other accessories. Now the owners, who have installed the user-friendly Tamil software `Padhami', `Padhakkam' and `Minnal', make an average income of Rs. 2,500 a month and the patronage is growing steadily. As of now, a chunk of villagers in these 30 villages have e-mail identities, which they use for seeking assistance from the Government under various schemes. The SARI project has evoked excellent response from the Government and the public.

F. Infothela (for rural healthcare delivery)

With Information Communication and Technology (ICT) revolutionizing healthcare delivery in the urban sector, efforts are underway to use the same for upgrading the rural healthcare scenario. The Rs 30 lakh 'infothela' project being prepared by IIT-Kanpur Lucknow Lab (KLL) under the aegis of Media Lab Asia (MLA) is a step in this direction. Explains Dr (Prof) Harish Karnick, Department of Computer Science and Engineering, IIT-KLL, "Infothela is a mobile platform for computer based applications, which would help in diagnosis of diseases and impart information on health to the rural populace." Currently, one prototype of the infothela has been built and is being tested and other prototypes with different designs are on the drawing board. Infothela is designed keeping in mind the village conditions in the country where electric power is not available all the time. So a pedal generator is designed in such a way that while pedaling, battery will keep on charging for running the on board computers and equipment. Expert say that infothela by bringing diagnosis to the doorsteps of rural populace will enhance disease prevention, allow early diagnosis, permit vaccine delivery, sample collection and even expert advice from remotely located doctors. To serve the purpose of primary screening, infothela has been designed to accommodate diagnostic equipment like blood pressure testing machine, blood sugar testing machine, and some other primary health diagnostic and testing equipment. All diagnostic tests data will be entered into the machine and programs will process the data and raise warnings when individual data or combinations of data are not within limits or show other abnormalities. The educational component of the thela is targeted towards understanding good practices for health, disease prevention and understanding the nature of disease, mainly about micro-organisms in Hindi. The infothela would also disseminate information on the availability of medical facilities, both

government and privately owned, on commonly used medicines and information of the existing government health program. The thela is expected to generate self-employment avenues.

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3. Challenges for ICT Implementation in Rural India

There is great diversity in local conditions in rural India and the local needs are highly specific. The ICT implementation for rural marketing in India has to face the following challenges:

1. *Illiteracy – you cannot use much of textual information*
2. *Middlemen - physical distances makes it difficult to provide proper price information.*
3. *Alternate media – not available.*
4. *Language - multiplicity and highly specific local languages*
5. *Easy loans - Reluctance of banks to provide soft loans to farmers.*
6. *Affordability – any new technology must be economical.*

In the absence of timely and correct information about prices, arrivals and market trends, compounded with the problems of low cash-at-hand and proper advice, farmers are forced to sell their produce at lower-than-expected rates. The result is that the benefits of the 'green revolution' have not really

4. Strategies for poverty alleviation have been successfully pursued with the use of ICTs

- Distributing locally relevant information
- Targeting disadvantaged & marginalized groups
- Promoting local entrepreneurship
- Improving poor people's health
- Strengthening education
- Promoting trade and e-commerce
- Supporting good governance
- Building capacity and capability
- Enriching culture
- Supporting agriculture
- Creating employment opportunities
- Reinforcing social mobilization

What is relevant here is not just that all these activities can be facilitated through the use of ICTs, but that such activities have been demonstrated to be instrumental in helping communities make the most out of ICTs.

5. Suggestions

The presence of a number of desired features in a website leads to higher user satisfaction. Such features are broadly aimed at satisfying one or the other of the following immediate user objectives:

1. Ease of access.
2. Up-to-date content.
3. Layout, design, consistent themes.
4. Easy navigation.
5. Higher interactivity.
6. Access through multiple media.
7. Higher use of non-textual information.
8. Multiple languages.
9. Lower cost of transaction.

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