

Concept and Architecture of Agricultural e-Commerce for Least Developed Countries

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Outline

- Introduction
- Agricultural e-commerce concept
- Architecture
- Necessity of Agricultural e-commerce
- Benefits
- Conclusions

Introduction

- Agricultural ICT is the newly emerging concept.
- Bangladesh (a least developed country) can also adopt agricultural E-Commerce to make a revolutionary change to the agricultural economy.
- Only ICT can make a bridge between the Marginalized Communities and Advanced communities to eliminate the e-gap.
- This research has been performed on the prevailing infrastructure of ICT and agricultural business operations in Bangladesh, in addition to a conceptual innovative model of Agricultural e-Commerce for sustainable development.

Necessity of Agricultural e-Commerce in Bangladesh (cont...)

- Moreover, producers and consumers related to agricultural sector should have the privilege to get the perfect information about the agricultural products, crops, market information, weather news etc. Internet with e-Commerce facilities can fulfill all these requirements.
- The ultimate development of Bangladesh will arrive by using ICT and digital opportunities through creating ICT entrepreneurship, knowledge based society and global connectivity in under-developed rural areas.
- However, the digital divide between the urban and rural areas is very prominent. Most of the ICT service providers are focusing on the city areas, not at all interested to the villages. The prime reason is the prejudice that village is not a profitable region.

Present ICT Infrastructure in Bangladesh

- BTTB is providing Internet Services at all districts and almost all Upazillas of the country.
- Besides BTTB about 145 ISPs are providing internet service to the nation, but most of them are located on the capital city Dhaka.
- According to the statistic that per 10,000 populations only 3 people get internet access and 50 gets proper telephone facilities.
- Additionally, the cost to get a new telephone line is about \$200 and the required high waiting time for connection establishment.

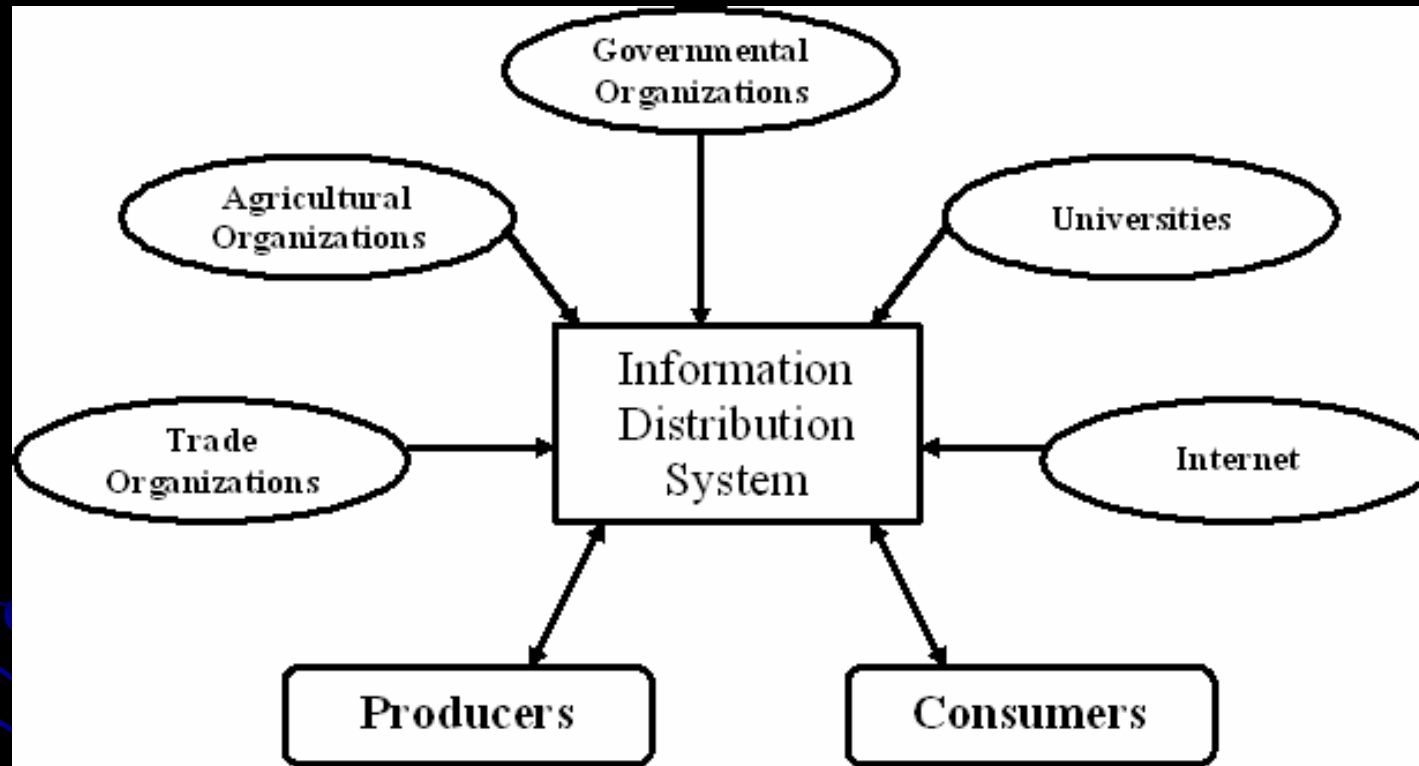
Present ICT Infrastructure in Bangladesh (cont..)

- In this situation other related alternative options may be useful.
 - Satellite and Microwave links (speed range is 34-155 Mbps).
 - Recently, 1800 km fiber optics is installed along 2900 km railway track.
 - Grammen Phone Company has taken an initial step to spread cellular coverage across the country and their development is in satisfactory level.
- There are two problems detected:
 1. The readily available IT infrastructures is concentrated primarily in major cities and towns; and
 2. The telecom backbone of the country, microwave radio, available bandwidth of 34-155 Mbps.

E-Commerce For Marginalized Community

- To ensure a well structured e-commerce system for the marginalized community the following functions are need to be considered:
 - Information Distribution
 - Input Supply
 - Commodity Trading Exchange
 - Logistics/Supply Chain Management

Information Distribution



Information Distribution for the Producers and Consumers

Input Supply

- E-commerce input supply firms should provide various inputs to farmers including seed, chemicals, parts, and machinery over the Internet
- Buyers and sellers agree on price, quantity, and transportation of the desired product. This model will facilitate the e-commerce for buyers and sellers of farm inputs including chemicals, seeds, parts and equipment, and animal health products
- Users can access the web-site and search for the products they need or display products they wish to sell
- E-commerce has the potential to increase the level of competition in the input supply business

Commodity Trading Exchange

- An electronic trading floor is that the company can host a marketplace and earn a small commission on every transaction
- Electronic transactions should be more liquid and efficient than traditional markets
 - geographic boundaries are eliminated and the potential number of users could increase.
- The key to the success of ecommerce market exchanges (or any market exchange) is a high level of liquidity

Logistics/Supply Chain Management

- Supply chain management has become a prominent buzzword throughout the B2B industry, partly because Internet exchanges have not achieved the promise that was expected of them
- The Internet is used throughout the process to keep close contact between the contracting company and producers
- The Internet will clearly be a powerful tool in the management of supply chains because it has improved the ability of managers to create networks

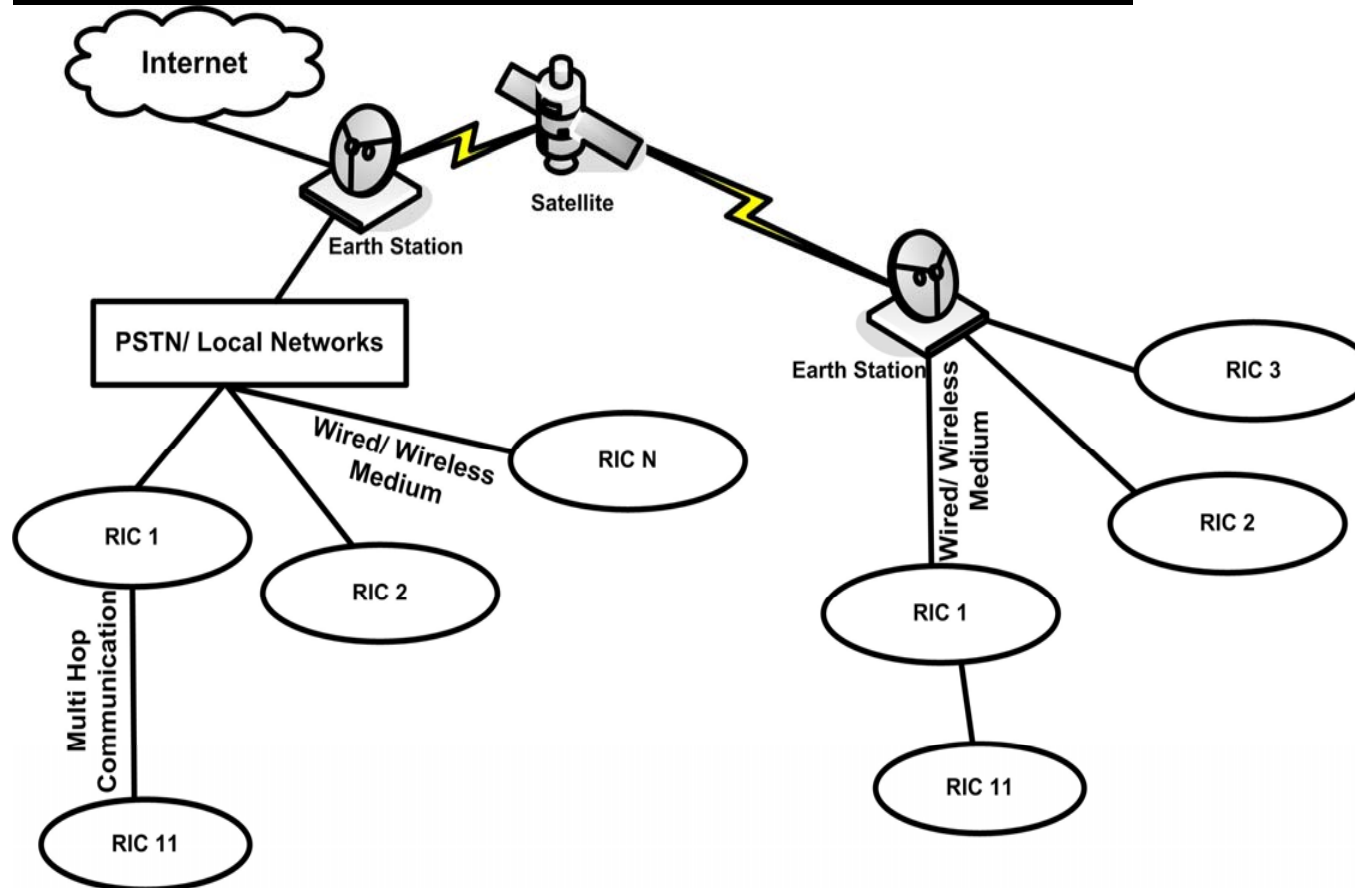
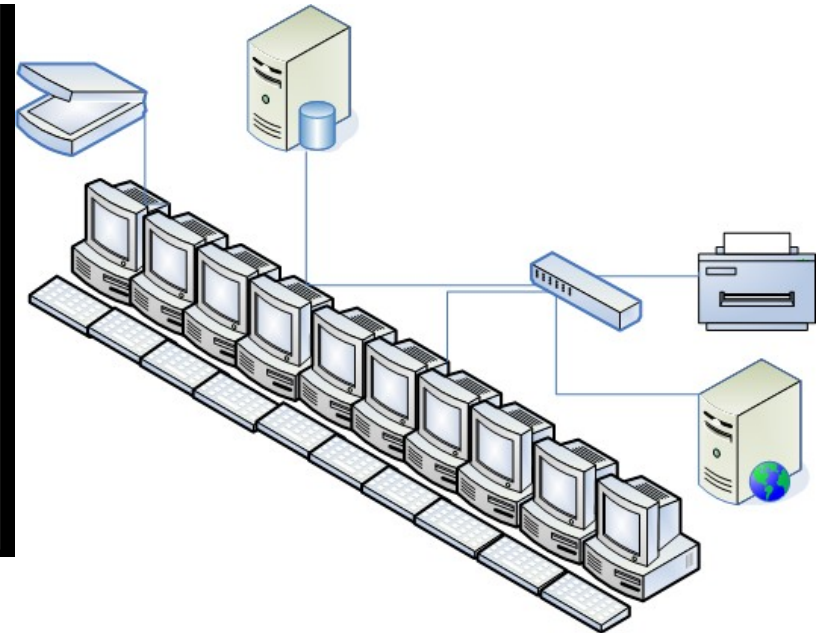
Necessity of Agricultural e-Commerce in Bangladesh

- The agricultural business in Bangladesh is encircled by three types of agents
 - Producers
 - Traders and
 - Consumers
- The traders are not doing anything special but gaining the super normal profit of the business.
- This proposed system exploits the producers directly not to give the appropriate portion what the producers deserve really.
- Agricultural e-Commerce will abolish these traders to optimize the present business structure by providing the normal profit to the producers (farmers) and minimum price for the consumers.

- A wireless local loop (WLL) or a mixed network model with Radio link (LOS-RRL) and Satellites (V-SAT) may help.

- If the village is closed to the district or subdistrict areas, the Rural Information Center (RIC), will be connected to the existing infrastructure through cable or LOS-RRL.

- For the remote areas a VSAT will connect the RIC to the internet via satellite RICs.



- All RICs will be connected to make a countrywide communication network through satellite (VSAT) or existing cable lines.

- A base station will be available to serve in each subdistrict and all RICs under the sub-district and the basestation will constitute a WAN.

Services Provide by RIC

- Education
- Poverty alleviation (Women)
- E-Health
- E-Government
- Radio Community
- VoIP

CONCLUSIONS AND FUTURE WORKS

- We have presented some ways to utilize the Rural Information Center (RIC).
- The RIC will decrease the digital divide between the urban and rural people.
- The rural poor farmers are the pillar of the economic strength of the country. The RIC with agricultural e- Commerce will open a new world to them.
- The technical matters are not fully discussed here. Initially, it may not be possible to start the services in the whole country. Initially about 5/10 centers may be established to check the response.
- The technical issues regarding the RIC will be discussed in detail in near future.

Thank You

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