Chapter 7
Use of ICT in Private Agriculture Extension

India's agricultural extension system was mainly driven by public institutions. Lately private extension organizations also started contributing effectively to the system. Incidentally private organization who were technically more savvy were the first ones to leverage ICT/telecommunication networks for extension activities. While their operational areas were not pan-India, they were successful in transforming the lives of the farmers in many states. This chapter will analyse some of these successful initiatives.

7.1 e-Choupal (ITC Limited)

e-Choupal is one of the initial efforts from the private players in India in using telecommunication networks in extension activities. Today the network is spread across 35000 villages through 6100 kiosks spanning over 10 states (Madhya Pradesh, Haryana, Uttarakhand, Uttar Pradesh, Rajasthan, Karnataka, Kerala, Maharashtra, Andhra Pradesh and Tamil Nadu) (ITC, 2016).The services from this project are reaching over 4 million farmers growing a range of crops - soyabean, coffee, wheat, rice, pulses and shrimp making it one of the greatest success stories in India Extension activities. ITC introduced this system from 2000. The system revolves round the concept of a small office (e-choupal) with computer and internet connectivity. The e-choupal is managed by an operator called sanchalak. A sanchalak is a literate among the villagers who can operate the computer and act as an intermediary between the farmer and the knowledge base. The initial set up cost is funded by ITC while the

operating cost is managed by sanchalak himself. A commission is paid to the sanchalak based on the business earned by ITC and therefore he acts as a sales agent for ITC.

Information which can be accessed through the e-choupal includes crop prices, weather, scientific farming practices etc. The information on weather is provided in relation to the crop pattern of the village thus benefitting the farmers directly. The price information allows the farmers to view the prices in the nearby market along with price offered by the ITC collection centers.

7.1.1 Business Model

As mentioned earlier concept revolves round e-choupal which is run by sanchalaks. This choupal which are connected to the market through the internet gives the market information to farmers on a day to day basis (Annamalai & Rao, 2003) (Dangi & Singh, 2010). The additional information will help farmers in taking decisions and also help them in cultivating the agricultural products which are profitable and in demand in market. The direct availability of prices to the farmers will reduce the power available to the intermediaries in the old model. This in turn reduce the transaction costs as the intermediaries are eliminated in most of the cases. During the harvest time, ITC offers to purchase the produce from the farmers at a designated price which normally will be higher than the mandi price. The farmer is having the option to sell his products to mandies or to ITC. If farmer decides to sell the same to ITC, he needs to transport the same to ITC centre where quality is checked and he will be paid the price along with the transport cost. If the quality is better, he will be given bonus points which he can use for purchase of inputs from the e-Choupals. The other important feature of e-choupals are the availability of inputs like seeds, pesticides and fertilizer at a low cost. e-Choupals will collect the informations about input requirement from farmers and project the same to the ITC which makes available this to the farmers. Due to aggregation of demand as well the elimination of multiple stages, prices of this inputs will be much lesser in e-Choupals compared to the village traders. Yet another initiative of e-Choupal is acting as a service centre for many services which require computers like taking printouts, offering computer games, supporting students in studies etc. thus contributing to the social development of the villages.

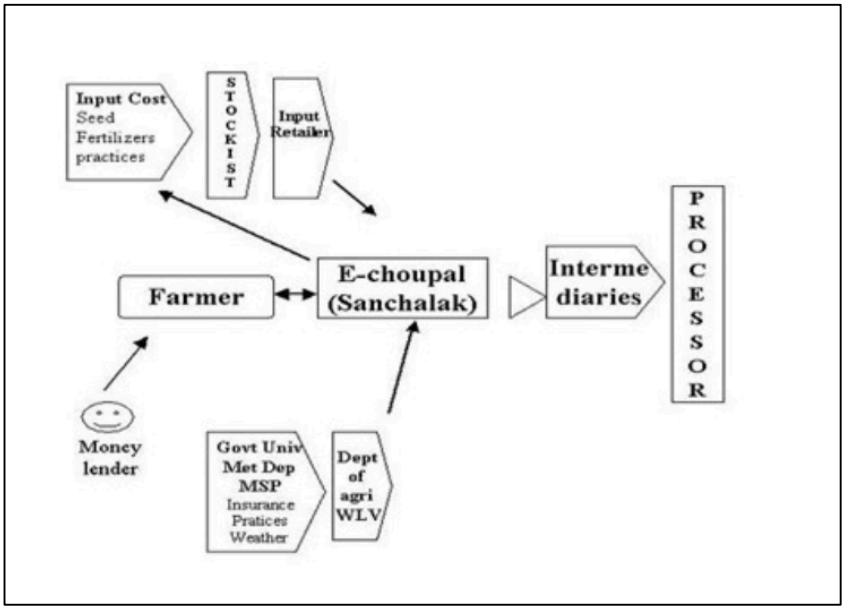

Figure 7-1 e-Choupal value chain *(Bowonder, et al., 2007; Department of Agriculture, Cooperation and Farmer welfare, 2017b)*

Another interesting aspect of ITC's e-Choupals was the use of commission agents in the system. (Annamalai & Rao, 2003)They act as transportation agents and used to provide information about farmers agricultural practices to ITC. Thus the initial opposition from the commission agents to the new system has reduced to a large extent by including them within the system ITC also benefitted by the knowledge they posses about village economy. The model was built on the existing system so that avoiding any major changes for the stakeholders. The ITC model of e-Choupal has been widely acclaimed for its role in introducing the collaborative model between multiple stakeholders in rural development. There is no doubt that the model has brought increase in mandi prices in agricultural produce to some degree. But its impact on a long term is yet to ascertained fully. The issues in purchase of inputs exclusively from the ITC and selling other consumer products through their outlet needs to be examined closely (Dangi & Singh, 2010). The e-Choupal model was successful because of its comprehensiveness in its approach. The trader who does different roles in a village society including money lending, input supply and product buying was successfully replaced by e-Choupals. The e-Choupal model shown that the big corporation can effectively intervene in the rural economy benefitting all the stakeholders. It also showed the importance of local partners (sanchalaks and samyojaks in this case) in effectively rolling out information technology models.

7.2 Green SIM : IFFCO Kisan Sanchar Ltd

IFFCO Kisan Sanchar Ltd is a joint venture between Indian Farmer's Fertiliser Cooperative Ltd (IFFCO) and Airtel. IFFCO is the largest cooperative societies in India having distribution network all over India. Green SIM is an offering from IKSL which acts as any normal SIM for accessing mobile network of Airtel. In addition to the normal network access, a subscriber of Green SIM will get agriculture advisories through voice messages and SMSs. In addition these subscribers do have access to an agriculture helpline. Initially 5 voice messages of 60 seconds duration were sent daily to Green SIM subscribers. Later it is changed into 4 voice messages and 1 SMS. SMS normally contains information related to weather and market information.

The Voice messages were created based on the cropping stage and goes through 2 step quality checking process. In the first stage, messages are checked by a group of agriculture experts and in the second stage auditing is done by a research institution, Centre for Agricultural Bioscience International (CABI). The farmers received messages based on the agro climatic zones, cropping stages and patterns. In addition they can also become part of special communities. Messages also gets tailored based on the communities subscribed by the farmers. The contents are a mix of State level, District level and more localised information. In addition to agriculture, these messages also contain information on education, health and employment.

IKSL regularly monitors two KPIs on the voice messages to measure the success of the program. These are Average pickup rate and Average holding time. Increase in these KPIs indicate a better acceptance of farmers based on these KPIs IKSL had identified certain characteristics (Palmer & Zelezny-Green, 2015)

1. Farmers are more interested in messages in dialogue form or messages with musical background (Chahal, et al., 2012).
2. Information related to indigenous practices or methods which can be easily practiced gets more better acceptance from the farmers.
3. Farmers are interested in Short term advices rather than advices with long term impacts.

4. By conducting Survey IKSL has identified requirement from farmers which indicated that they would prefer information on health, employment and education. Later IKSL has included the same which in turn increased the holding time.

GSM study has indicated that 4 major take aways for farmers who are using Green SIM. These are

- Improved crop yield and increased income
- Accurate market prices to earn from more crop sale
- Weather information to avoid costly wastage.
- Informed planting to prevent low crop yields.

Another Study by Merijn van Baardewijk has indicated that the IKSL experiment has not improved the bargaining power of the Farmers even though knowledge asymmetry has been addressed by the green SIM from IKSL (Baardewijk, 2017). This points out to the fact that farmers issue is not only limited to the knowledge asymmetry but also related to the whole ecosystem. ITCs e-Choupal has addressed this issue by providing them an additional channel of selling their produce which is absent in this model.

Even though IKSL has tried to market other related products like insurance etc. by partnering such companies, these were not very successful. Presently Airtel as well as IFFCO are benefitted due to this project. Airtel is getting substantial subscriber growth and subscriber loyalty (Since mobile portability is available at a very low rates of Rs 17 in India, customer loyalty is one critical issue bothering all the telecom operators) in rural India through Green SIMs. IFFCO gains brand reorganization and better sales by improving its services to the farmers.

7.3 Reuters Market Light

Reuters Market Light (RML) is an initiative in private sector in leveraging the increased mobile penetration in agriculture extension. RML helps farmers in getting information on weather forecast, market prices and crop advisories. It was launched on 2008 and currently have subscription of more than 3.3 million farmers. The service is provided on subscription model with subscription charges.

Studies conducted (Chahal, et al., 2012)on RML services indicates that the farmers are of the opinion that subscription rates are on high side and the facilities available do not commensurate the subscription charges being paid. Another important take aways of the study is that while farmers have taken advantage of weather information and information on market conditions, most of the farmers were unable to realize higher price for their products. These findings are in line with the findings on Green SIMS were market price information alone could not bring improved prices to the farmers.

7.4 mKRISHI (Tata Consultancy Services)

mKRISHI is a technological platform introduced by Tata Consultancy service to tackle the information asymmetry faced by the farmers. Initially the mKRISHI offered only information services wherein farmer can access the expert advisories through his mobile phone. But later the services were widened including farmer groups, producer companies of small farmers and cooperatives. This farmer aggregation units have access to a large number of farmers thus bringing more value to the system. These aggregation units also have the required organizational capabilities to enter into partnership with other stakeholders like input dealers and traders. Such a farmer group is called Progressive Rural Integrated Digital Enterprise or PRIDE (Sethu, 2013).

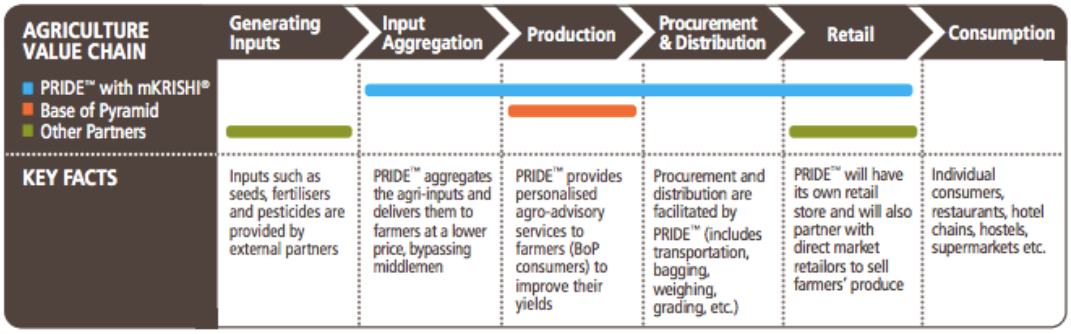

Figure 7-2 mKrishi value chain (Sethu, 2013)

In the agro-advisory part of mKRISHI, farmers are able to raise queries using voice, SMS and photo to the agri-experts sitting in remote location. Experts after reviewing the same, will provide the necessary recommendations to the farmers. One important difference is the handholding provided by the field officers in using the system. In the initial stages, field officers regularly visit the villages and train the

farmers. Once the farmers are comfortable with the system, the frequency of the visit is reduced to the bare minimum. This human touch is one important factor in the success of the project.

7.4.1 Business model

The business model adopted by mKRISHI is as follows (Padma Sethu,2013). mKRISHI along with PRIDE intents to provide all services in the agriculture value chain. PRIDE is acting as a node by connecting the farmers to the other stakeholders. Three important service provided by the mKRISHI are.

1. Aggregating the farmers
2. Organising the input.

   Once the requirement of farmers are received PRIDE or the mKRISHI partner who are having required tie-up with various input dealers can source this inputs.
3. Market facilities

   The mKrishi partner will also have relationship with market traders and wholesale retailers so that the farm produce can be sold at a better price. Here also collective strength of the farmers will come into play.

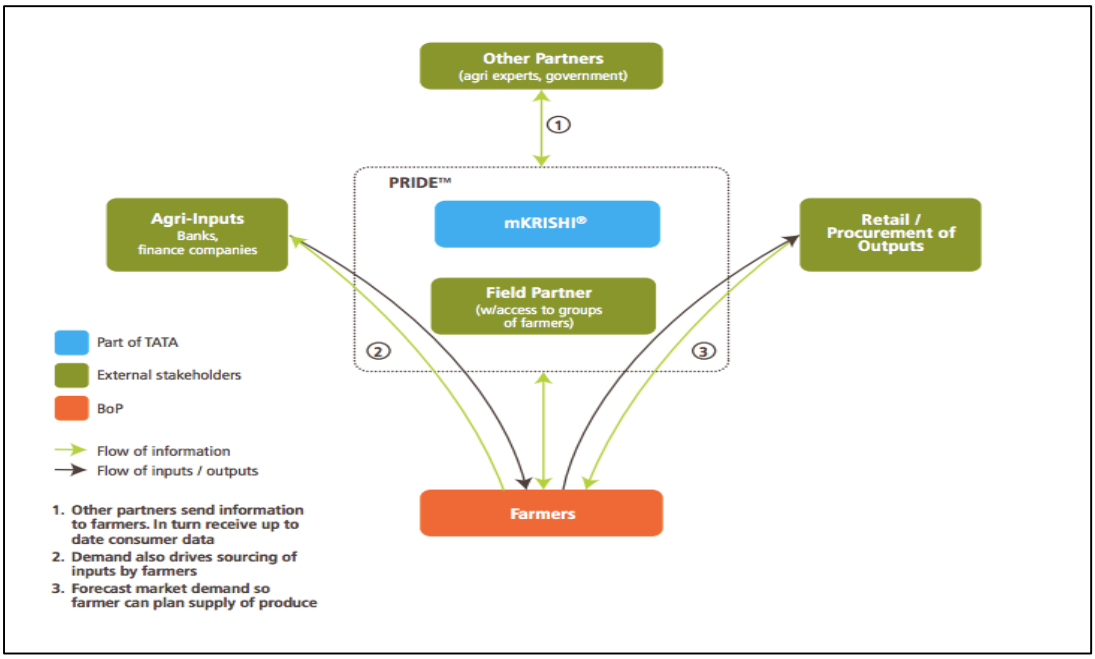

Figure 7-3 Business model of mKrishi *(Sethu, 2013)*

In addition to the advisory system, with the above business model mKRISHI was successful in lining farmers to other stakeholders including banks or other credit suppliers. Similarly mKRISHI is also able to facilitate a demand driven production. Thus mKRISHI becomes a very successful model by rolling out a comprehensive model influencing the entire value chain.

7.5 **Conclusion**

In addition to the above four example, there were other agricultural extension project in private sector which uses telecommunication networks to reach out the farmers. It can be seen that information alone has not resulted in the expected impacts. Projects which influence the entire value chain are more successful than the one which only caters to the information needs. Handholding the farmers is also very critical as many farmers are still not familiar with the messaging techniques. In addition aggregating the farmers also resulted in better bargaining power impacting their profit margin.