

## At the Push of a button: DVAR Technology Offers Instant Solutions in Village

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### ABSTRACT

*The Information and Communication Technology (ICT) in this era of globalization has accentuated new modes of knowledge transformation and communication patterns. ICT has opened up uncommon opportunities for developing countries in terms of providing low cost access to information. In developed countries information dissemination through ICT proved to be very effective for the growth of the farmers and the agriculture sector, due to the fact that farmers of developing countries are Internet and computer savvy. On the contrary despite using the same technologies and the same approach to help Indian farmers, our efforts are not being effective. So, we must use ICT to help Indian farmers but not in a way that developed countries are using but in way that Indian farmer can ask for a help with the push of a button, same way get the solutions for their problems with the push of a button. DVAR is a technological innovation to promote one farmer at a time concept, each farmer will get personalized attention, and solutions to their problems. This paper attempts to review the significance of existing DVAR technology in agriculture, discuss their opportunities in agriculture and examine their challenges as well.*

**Keywords :** Information communication technology, DVAR technology

Frank (1987) maintains that the greatest challenge facing the agricultural sector is the delivery of useful information to rural communities. In the same vein, Van Niekerk (1993) sees one of the ways of improving production in agriculture as the reduction of the gap between theory and practice. The gap between theory and practice can only be reduced if correct methods of communication are implemented. These methods should be able to support both direct and indirect communication. With the state of the art Internet infrastructure available, agriculture extension departments are using ICT to disseminate information to farmers. In developed countries information dissemination through ICT proved to be very effective for the growth of the farmers and the agriculture sector, due to the fact that farmers of developing countries are Internet and computer savvy. On the contrary despite using the same technologies and the same approach to help Indian farmers, our efforts are not being effective. One of the reasons we can say could be, the literacy gap between the farmers of the developed countries and farmers of India. It is a fact that, even though Indian farmers cannot write on a piece of paper, or use Internet or even read a news paper but one thing Indian farmer can do is

to talk about his problems in his own language with a greater detail. So in order to help Indian farmer, we need to take a very innovative approach by providing them a medium or a technology, through which they can talk and explain their problems. We must use ICT to help Indian farmers but not in a way that developed countries are using i.e. help through e-mail, chat, Internet web sites but in way that Indian farmer can ask for a help with the push of a button, same way get the solutions for their problems with the push of a button. We all can agree that even though most of the Indian farmers are not literate but what they can easily do is, press a single button and record his problem with a sample and press a few more numbers in a keypad to get his answers.

### METHODOLOGY

DVAR is designed to be used by illiterate farmers who do not know computers and Internet. It can be used on very low bandwidth connection without sacrificing the audio/video quality.

DVAR technology is consist of various technologies like Video on Demand ,Off line video messaging , Content

Management System, Video conferencing, Relational Database Management System. Farmer will interact with push of a button and scientist will interact with click of a mouse. Both will interact with each other without the time bound so farmer can concentrate on how to get most out of his farm and scientist can concentrate on his research.

DVAR technology can create Communication Bridge between the scientists and the farmers. It is an innovative approach to help Indian farmers for their day to day problems. Farmers can get correct answers directly from the scientists in an efficient and timely manner.

- ✓ It does not expect farmer to be literate
- ✓ It does not expect farmer to know about whom to submit his problem given that there are many branches of agriculture research
- ✓ It only expects farmer to come with his diseased crop/plant sample, press a button and follow some audio/visual prompts in a local language, put his sample, explain his problem and go home and next day come up with his receipt, press few numbers and get his solution directly from scientist, very specific to his problem.
- ✓ It can help scientists to deliver training videos to only concern farmers
- ✓ It can help scientists to get consolidated problem solution from various available resources and deliver it to concern farmer i.e. training video about new farming techniques.
- ✓ It can help extension department to deliver training videos to all farmers regarding new techniques and ideas.
- ✓ It can help government to communicate to mass for specific awareness campaign

#### **Services offered by the technology**

DVAR technology is not about only being a farmer to scientist interaction medium; it can be effectively used by government, agriculture extension to create awareness amongst rural population.

- ✓ It can help farmers to solve their day to day problems with push of a button
- ✓ It can also help various government departments to interact with farmers, through awareness videos or one-on-one off-line messaging

- ✓ It can particularly help agriculture extension department to disseminate agriculture related awareness information to farmers without spending much budget on travelling
- ✓ It can further help government to create awareness amongst farmers to make them active participant in development process resulting effective nation building exercise
- ✓ It can be used by private companies to reach specific audience for targeted marketing

#### **DVAR advantages to the scientists**

Scientists are the stake holders who gets the major benefit out of the DVAR implementation, it will help scientist to dramatically reduce the time of research by directly interacting with the farmers from their desk without wasting time for on farm visits. DVAR can act as one-on-one and 24x7 interaction medium to get feedback from farmers and conduct farm trials, scientists will benefit the most by helping farmers for their research as well as to increase their productivity. DVAR will allow scientists to build farmers research pool, by interacting with either individual farmer or a group of farmers. Responsibilities of agriculture scientists are to do research; DVAR implementation will help them perform their main responsibility and not to act as an on-call operator for farmers. It will allow them to interact with farmers at their own convenience and not when farmer calls. Further,

- ✓ Scientist can implement their new research ideas to be applied to real farm conditions and not on university test farm
- ✓ Scientists can interact with individual farmer for their individual and unique problems
- ✓ Scientist is the last source of the information, this way pool of trust can be built for overall increase in productivity of the farmer and the nation

#### **DVAR advantages to the Farmers**

Farmer is one another important stake holder, who benefits the most out of DVAR implementation. They are expected to interact with "Gramsevak" for their day to day problems, questions and information. With DVAR for their farming related questions and problems, they can directly interact with scientists and get the help from the subject experts talking guess work out of the loop. Farmer does not need to know whom to ask or what department to consult for their farming related problems. In order to use DVAR

technology;

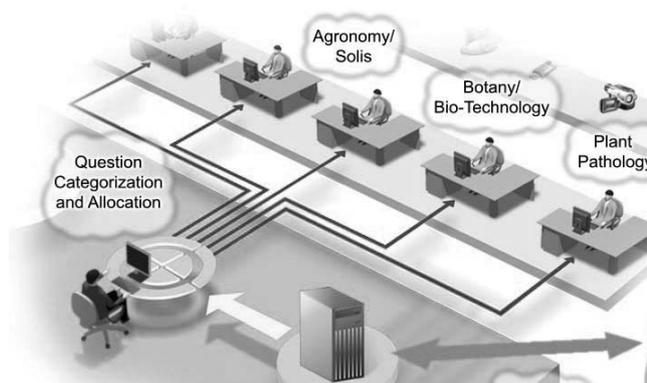
- ✓ Farmers do not need to know computer, Internet, e-mail, chat etc.
- ✓ Farmer does not need to be present for video conferencing meeting, because no one knows when farmer will have question related to their farming problem. Farmer cannot wait for their problem to be resolved till the next video conference schedule.
- ✓ Farmer getting quick solutions for their problems, will be more productive and prosperous
- ✓ The confidence and trust bridge between farmer and scientist will bring excellent result for overall growth of the farmer, resulting overall growth of agriculture sector for the nation

**DVAR information flow for various services**

Even DVAR unit is designed for completely automated for message flow, although it requires minimum intervention in order for backend services to work as expected.

**Message flow from farmer to scientist**

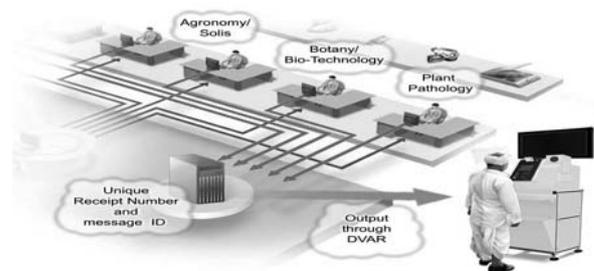
This process is semi-automatic, as the concept of DVAR does not want farmer to worry about the hierarchy of various agriculture departments, every message received from farmer needs to be categorized by manual observation, so scientist subject matter experts do not have to go through each and every help request. It is presented in Fig. 1.



**Fig. 1: Message flow from Farmer to Scientists**

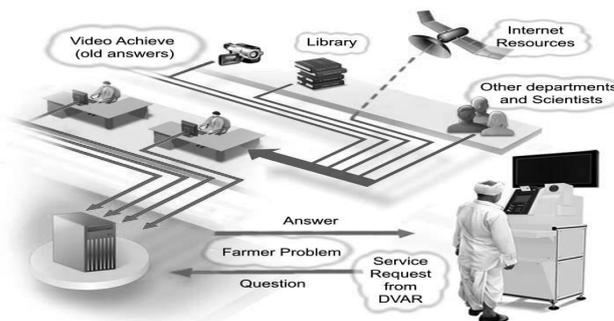
**Message flow from scientists to farmers**

Scientists can provide answers to the farmers’ problems. It can be in form of a simple video recording or training video in form of a video file. Scientists can also broadcast a particular video to all the farmers. It is presented in Fig.2.



**Fig. 2: Message flow from scientists to farmers**

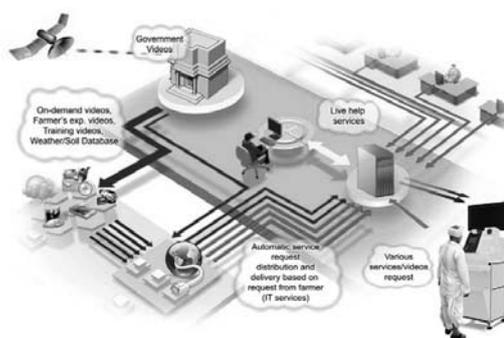
Scientists do not need to worry about sending answer to a particular farmer. DVAR collaborative platform will take care of delivering the answer to a concern farmer as each message has unique 10 digit ID. This ID takes care of keeping the reference of concern farmer. All scientist has to do is to click on record button and record his answer. In case of scientists want to deliver particular outside video as a further reference, he can upload that video to the DVAR collaborative portal and at the time of solution delivery, uploaded video will be played on big screen to concern farmer. This way each farmer can get customized solutions for their problems in matter of hours. It is presented in Fig.3.



**Fig. 3: DVAR as collaborative medium for scientists**

**Various services message flow**

Farmer can automatically ask for various services through DVAR other than farming related problem solutions. It is shown in Fig.4.



**Fig. 4: Various service request message flow**

### Soil-health card request

Farmer can ask for his soil-health card printout without anyone's help. All he has to do is to enter his soil health card number in to the DVAR unit and his soil-health card can be delivered if available in the database.

### Weather database

Area specific weather prediction can be delivered to a farmer with push of a button.

### On-demand video database

There are many agriculture advisory videos available with agriculture department or agriculture universities, farmers can be motivated to view these videos through DVAR unit, all they have to do is to choose available videos and it will be delivered on larger screen of DVAR unit in matter of seconds.

### Challenges

- ✓ Co-ordination of various departments for complicated eGRAM Vishvagram network to setup DVAR unit
- ✓ Speed of eGRAM Vishvagram network may or may not be adequate for transferring high quality video in time
- ✓ Farmers motivation to use DVAR for their problems

- ✓ Building trust of farmers to implement solution by Scientists
- ✓ Coordinating advise/answer time for scientists
- ✓ Whether audio/video quality is adequate for farmers and scientists for back and forth interaction

### CONCLUSION

DVAR is a technological innovation to promote ONE FARMER AT A TIME concept, each farmer will get personalized attention, and solutions to their problems. DVAR technology does not expect farmer to know computer or know how to access Internet for their information. DVAR technology let backend stack holders to do that work for them. DVAR can use existing resources like video libraries, training and awareness videos to motivate and educate farmers.

### REFERENCES

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