AN OVERVIEW OF THE ELECTRONIC AGRICULTURAL STUDIES IN TRADING AND MARKETING SECTIONS

O PREZENTARE GENERALĂ A STUDIILOR ELECTRONICE AGRICOLE ÎN ACTIVITĂȚILE COMERCIALE DE MARKETINK MARKETING

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Abstract: *The present study surveys e-agriculture research and experience in the fields of business and the market, through library study, in the first decade of 2000. The omission of middlemen, the expansion of the market, and the ease of buying and selling products, are some of the many effects of electronic marketing in the agricultural sector. The whole process of farming, from cultivation to harvest, could be profitable, on the condition of success in selling the product and supplying it to the market. There have been a great many achievements in different sectors of agriculture in Iran over the past few years, yet Iran's agricultural market lacks a unified system. In this regard, electronic trading could pave the way to providing a situation which would allow farmers to enter the market as sellers. Conclusions obtained by this study show that the India Agriculture Marketing Information Network (AGMARK-NET), is a pattern which could be applied to the public sector of Iranian agriculture, to create a marketing information system. In addition marketing in rural ICT offices network (brokerage model) is a proper model for the private sector of agriculture in Iran, to address the interests of small-scale farmers.*

Key words : *Electronic Agriculture, trade & marketing, AGMARK-NET, brokerage model*

INTRODUCTION

Electronic agriculture provides a modern arena to reach agricultural information, development and entrepreneurship, and services, and

transferring technology and information through the internet and related instruments. Through applying multimedia technology, electronic agriculture teaches those in the agricultural sector at local, regional and international levels, and offers help with technical back-up and the creation of new capacities. Some examples of agricultural programs are market price information systems, electronic promotion services, using satellite and GPS, and applying electronic systems to production (FAO 2005, Allahyari and Chizari, 2009).

Applying the internet to different economic sectors, especially the agricultural sector of developing countries, is increasing. For example agriculture uses the internet 56 per cent in Korea, 50 per cent in Singapore, 45 per cent in Cuba, and twenty per cent in Egypt. Through applying ICT, rural companies could provide villagers with a variety of information, from agricultural operations to marketing and selling activities (UNCTAD, 2010). Agricultural e-marketing positively influences the elimination of intermediates, reduction of costs and finding customers. Most farmers own a small area of farmland and have little investment. Therefore, the important issue is what kind of system should be designed to help them to sell their products with internet marketing (Wen 2007).

Alavion studied the feasibility of rice e-marketing in Rasht (northern Iran). To this purpose, 68 rural ICT managers and 57 agricultural experts, and 367 rice farmers, from a sample of a 90000 farmer population, were selected. The result of study showed that nearly 80 per cent of ICT office managers and 68 per cent of farmers have a high tendency toward using rice e-marketing, and more than 70 per cent of respondents chose rural ICT offices for rice e-marketing. Finally, the result of research presented two models. The first model was about business between farmers and other consumers, with the method of 'catalogue merchant' and the second model was business between rural ICT offices and consumers with the method of 'brokerage'.

In both models, rural ICT offices have the role of 'buy/sell fulfillment'. In the brokerage model, farmers should refer to ICT offices and represent specification of their products, so that offices' operators record the information after they enter the rural office site, and send products through that office to the customer (Alavion, 2011).

In a survey conducted by Zanganeh and Khosravi Pour (2010) on effective factors in receptivity to electronic marketing through small and medium

agencies in agricultural section, factors such as compatibility, relative advantages and increasing awareness to profitability were discussed as effective factors in receptivity to electronic marketing, so that an economic unit finds its compatibility with e-commerce technology, understands the relative advantages and benefits of e-commerce, and considers it as a strategic option to develop and exploit commercial opportunities. Then, through representing results of several studies, they concluded that the major problems in conducting e-commerce in the agricultural sector are a lack of strategic management in agricultural section in order to perform e-commerce, deficiency in skills and capabilities of high level managers, the intangible nature and advantages of e-commerce in the agricultural sector, little knowledge of addressees in the agricultural sector about the advantages of e-commerce application, low awareness of managers in this sector of e-commerce goals to develop the sector, and a limited speed in internet lines and shortage in centers for submitting online agricultural services (Zanganeh and Khosravi Pour, 2010).

To survey the advantages, challenges and methods of using IT in the Iranian agricultural sector, after reviewing the basic concepts of electronic government, markets and electronic portals, Mousavi Nejad and Meimand Pour (2008) dealt with the roles and other aspects of IT to develop agriculture in Iran, and also studied ways of entering agricultural portals in the private sector, and key factors in e-marketing function for agricultural products. In the following, three points were expressed for better application of IT in agriculture, including full integration and coordination among active websites, development of promotional process to educate activists in the agricultural sector and attention to the role of the mobile phone, as farmers have far more access to the mobile phone than to the computer and internet (Mousavi Nejad and Meimand Pour, 2008).

Naseri *et al.,* (2008) dealt with the evaluation of the existing status of business in Iranian cooperative companies through the SWOT method, attempting to submit a model for electronic business of cooperatives, and to facilitate relations between producer and user.

In addition, the benchmarking method was used to apply the experiences of China and India. To submit a model for electronic business in cooperatives, the e3value technique was applied. Finally, some steps toward e-business in cooperatives were mentioned including:

- Electronic integration: Providing comprehensive and integrated financial software which would cover all financial activities of cooperatives regarding their types of activity.
- Electronic cooperatives: In this model, the cooperative is a digital intermediary between service suppliers and required products of farmers and ranchers with the members. In fact, this model is a kind of digital service for members. Members of the cooperative are previously introduced in the site, and cooperative services are submitted to the members; this method could help the cooperative to gain new members.
- Electronic network of Iranian cooperative businesses: This network requires private financial, communication, distribution, and information and marketing networks (Naseri *et al.,* 2008).

Gholamrezaei *et al.* (2008) used survey research method (descriptive-correlation), to study the effect of e-commerce on marketing agricultural products of Kermanshah. Among 21 villages equipped by the ICT center, and among all literate farmers, they selected 333 farmers. Conclusions showed that different literate people equally believe that e-commerce is effective economically on marketing agricultural products, and also there is no relationship between land size, age and economic status of farmers and the way of responding to questions of economic factors. The hypothesis of the research was that economic factors of IT and relations are equally effective, and the result was that between subgroups of economic factors, economic outcomes have the least influence, and economic beneficiaries have the most influence on marketing agricultural products (Gholamrezaei *et al.,* 2008).

Adrian (2010) surveyed e-marketing in the agricultural sector of Romania. He stated that development of e-commerce is slow in eastern and central Europe due to cultural issues, but additionally, the weak development of modern communicational technology had the most influence on this. Development of e-commerce in agriculture in Romania is less than 0.1 per cent, and they hope that this problem will be removed with new investments in communicational infrastructures. In the following we will introduce several samples of websites, for example the stock exchange website (www.bursademarfuri.ro) which offers required information related to the price of each agricultural product. Also, the other website is Romania's stock exchange website (www.bursaagricola.ro) with the major goal of

providing conditions for supply and demand in order to create a healthy market. Providing information, and the required timings and statistics of farmers, these websites have great influence on commerce and business, and they are good sources of information. Finally, the website (www.e-licitatii.ro) provides the possibility of participating in online public auctions (Adrian, 2010).

Manouselis *et al.* (2009) surveyed the agricultural e-market in Greece, and mentioned that agricultural companies are increasing in the e-market arena, and that government support could be effective in receptivity to e-commerce in the agricultural sector. Projects conducted in this area in Greece include the website (www.goonline.gr) which has e-commerce instructions accessible in it, and the website (www.e-pixeireite.gr) which is for applying electronic business method. Evaluations of small and medium companies show that 67 per cent of companies which are equipped by computer have an internet connection, with 86 per cent of them having ISDN and DIAL UP connection, and others having ADSL connection. Development of the mobile phone is far more than internet, and business with mobile phones is hopeful in Greece. According to this report 24 per cent of farmers had access to a computer, but 90 per cent of them had a mobile phone. Therefore, the new generation of mobile phones with the capability of connecting to the internet is qualified to be replaced by common computers. Ease of carriage and no complexity of mobile phone are issues which attract farmers (Manouselis *et al.,* 2009)

Wen (2007) surveyed a commercial system for electronic selling of agricultural products, to perform selling, financial analysis and market timing. This system comprised three parts; a financial part, an ordering part which collects information on products and analysis status, and an administration part which supervises the buying and selling process. Also there was a section called database on which basic information is recorded. This information included sales amount, sales costs, orders amount, net operating capital, market price and so on (Wen, 2007).

The Hawaii Department of Agriculture (2006), introduced a marketing model of agriculture in Hawaii in a feasibility study of e-commerce in the agricultural market. In this project, components such as farmers' computer skills, internet infrastructure and delivery of goods to market were surveyed at first, and then a website was designed with the capabilities of 'shopping

cart', and a PayPal electronic payment system (intermediate service for online buying through e-mail). Farmers deliver their products to agricultural companies, and a central company delivers the products to the customer. The Ministry of Agriculture in the USA supported this model, and started to work with the participation of 24 agricultural companies in 2006 (Hawaii Department of Agriculture., 2006).

Shehata *et al.,* (2006) dealt with the feasibility of e-commerce in cooperatives through interviewing managers of cooperatives. Before studying feasibility, 350 managers were called on, and finally 147 managers agreed to participate. Results showed that approximately 46 per cent were interested in applying e-commerce. From this amount 33 per cent required technical help and 19 per cent were willing to invest in this plan. 50 per cent of them selected the option 'I would invest'. Shehata offered to design a portal to locate a link for each cooperative, or to establish a company which supplies cooperatives' products with the name of the company, and each cooperative would be obliged to pay annual costs for building, employees, propagandas and equipment (Shehata *et al*., 2006)

In an article titled 'Marketing Strategies for Farmers and Animal Farmers' the sustainable agriculture network (2006) dealt with different aspects of agricultural marketing in several chapters. In the online agriculture section, it offered advice related to agricultural sites and how to support them, encouraging farmers to have a website to introduce and sell their products. This article looked at marketing Maryland goat and sheep[1]. In Maryland State, one of the northern states of America, villagers use a website to sell their livestock. Farmers register in the site through entering individual information, contact number and email along with livestock particulars, and deal with electronic sales, along with other producers. The site is the farmers' online marketing[2] and is one the oldest agricultural virtual markets. It was established in 1995 and supplies different crops, horticultural products, livestock, and aquatic products, and so on. In this site, sale booths are rented for six months or one year. Many sellers across America and

1- www.sheepgoatmarketing.info
2- www.farmersmarketonline.com

Canada use this site. By special request, orders will be delivered anywhere in America or Canada within three days (SAN, 2006) .

In an article titled 'Electronic commerce, Marketing Networks and Centers' Aldin (2003) looked at business management projects and marketing channels and described different models which have business management, and also models which perform directly from producer to consumer without the presence of business management. In the article, horizontal and vertical electronic markets are explained (Aldin, 2003).

The Agricultural Marketing Information Network of India (2000) is one of the biggest projects about market information. The National Information Center (NIC) is supervised by the Ministry of Communications and Information Technology of India, which started this project in cooperation with the Ministry of Agriculture. In the first stage, between 2000 and 2002, 735 great agricultural companies of India were identified and became part of the network. Also, 75 marketing and inspection groups were created which provided required infrastructures to create networks in different states. Computer centers in great markets were equipped by one of ISDN, ADSL or WIRLESS services regarding facilities. 537 other markets joined the network during 2004 and 2005. In this system, the newest information about prices of agricultural products which are distributed across India is available in the website. This national project is active in seven groups of agricultural products as follows:

Group 1- Cereals (wheat, maize, rice)
Group 2 - Pulses (bengal gram, red gram, green gram, black gram)
Group 3- Spices (ginger, garlic, red chilies)
Group 4- Fruits (mango, apple, orange, banana, pineapple, grapes)
Group 5- Vegetables (onion, potato)
Group 6- Fibers (cotton, jute)
Group 7- Oilseeds (groundnut, mustard, soybean, sunflower, sesame) (AGMARK-NET, 2000)

DISCUSSION AND CONCLUSION

Conclusions of some studies have shown that awareness and adoption to electronic agriculture enjoy a better condition in Asia and Africa than in Europe and North America. EAWG – e -Agriculture Working Group (2007) studied 4000 people in 135 countries worldwide in cooperation with FAO

and several other world organizations in a poll titled 'Electronic Agriculture in the World'. In a question related to respondents' familiarity with the term e-agriculture in Asia and Africa, the percentage of those who were familiar with e-agriculture was more than on other continents, so that 37 per cent of responses in Asia and 36 per cent of responses in Africa were positive, while in North America 29 per cent and in Europe 32 per cent of answers were positive. The other sample is feasibility by Shehata *et al.,* on managers of agricultural cooperatives in Hawaii states, which showed approximately 46 per cent interest in applying e-commerce, while in a survey conducted by Alavion, receptivity to e-commerce by managers of ICT offices of Rasht city (Northern Iran) was approximately 80 per cent, and in a survey conducted by Veslo and Paul (2004) receptivity to ICT among 100 private companies of southern Africa was 74 per cent.

Market information system is one of major prerequisite of e-marketing. Model AGMARK-NET is one of the complete performed projects in this regard. Also FFTC (Food and Fertilizer Technology Center) in East Asia including seven countries (Indonesia, Japan, Korea, Malaysia, Philippine, Taiwan and Thailand) is active in this regard, and one of its duties is helping with development of agricultural marketing information system. This system is protected in all the seven countries by government, and its budget is provided by the ministry of agriculture and its co-working organizations. There is a developed and effective system of wholesale in small and large cities in Taiwan, Japan and Korea, and collecting and transferring price information to authorities of these markets is the duty of wholesalers. In Thailand and Indonesia, where there are no wholesale markets, price information is based on surveys by two groups of consumers and farmers. Filipinos use public markets and supermarkets in Manila, and 44 business stations in provinces.

In issues which Sustainable Agriculture Network (SAN) considers, farmers record information of their products online and directly on the website. However, in Iran most farmers are not skilled in using the internet and conducting this project requires intermediates in villages, such as agricultural service centers, rural cooperatives and rural ICT offices. However the important point is considering prerequisites of e-commerce for these intermediates. For example, the IT department of the Central Union of

Rural Cooperatives[3] has designed an e-marketing link in the site of the union, and a site is set up for each union in centers of provinces independently. Nonetheless, practically, unions of centers of provinces were not willing to cooperate. This disagreement was due to lack of e-marketing prerequisite in rural cooperatives. In this regard, rural ICT offices are considered to be better options. These offices are managed with proper dispersion across villages by those whose families are often farmers, and by offering internet, mail and banking services they have a great capacity to help with agricultural activities. It is considered necessary to create an integrated system of rural ICT offices.

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