INNOVATION IN AGRICULTURE - USE OF COMPUTER SYSTEMS

INOVATIA IN AGRICULTURA - UTILIZAREA SISTEMELOR INFORMATICE

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Abstract: *It is now generally accepted that IT is an important resource for a modern agriculture. Development and improvement of telecommunications computing offers new farmers the way to obtain more technical information and economic and has an effective use in their decision making.*
Nowadays modern farmers are business people trying to achieve that plants and animals to grow under certain conditions, to find a more profitable way.
The amount of information that farmers can and should use IT for management decision making is in rapid growth. These reports include information on technological advances, markets, and manage data on their own farms.

Keywords: *agriculture,innovation, computer system*

INTRODUCTION

Modern computer technology can provide farmers easy access to a large amount of information, can help them to choose among the informations needed for decision making. Information and communication technologies are in a quick development. Internet impact on farm management is already very important. Note that Internet use facilitates the use of PCs due to the possibility of assistance from a distance and because farmers have access to a large volume of information and updated summary of the interest (weather, prices, markets, methodology, etc.). Management tools for farmers needs about recurring problems is expected to be higher because these problems are quite common and for which are general solutions.[2] Farms connected to the Internet, use this tool mainly for getting information and advertising, but the number of farms using the Internet for e-commerce is small.

MATERIALS AND METHODS

Induction and deduction, analysis and synthesis of documents

RESULTS AND DISCUSSION

Through the Internet the farmer may be connected to his counselors and information offices, his partner, etc.. and thus specific to a firm becomes public information for all farmers, the question is that this integration will be limited if it can be dangerous due to risk of violating the private rights and interests of each specific. Simulation models quickly gained in importance for crop and animal production research. Linear programming and other similar techniques are also very important for economic research. Implementation of similar systems at farm level may lead to a considerable increase in the quantity and quality of production and profits. Farmers in many countries, especially in rainy areas where agriculture is practiced in an irrigated regime, living at great distances from each other, but are concerned with the problems facing farmers and others as they settled in other regions.[1]

Table No. 1. Broadband connectivity in world rankings

Country	% >5 Mbps	Q1 08 Change	Q4 07 Change
- Global	19%	+19%	+16%
1 South Korea	64%	+0.2%	-4.5%
2 Japan	52%	+9.3%	+16%
3 Hong Kong	37%	+6.0%	-4.3%
4 Sweden	32%	+9.0%	-0.8%
5 Belgium	26%	+28%	+57%
6 United States	26%	+29%	+30%
7 Romania	22%	+6.1%	+8.5%
8 Netherlands	22%	+9.5%	+5.4%
9 Canada	18%	+35%	+19%
10 Denmark	18%	+24%	+50%

Sursa : Wireless World: WiFi now in rural areas July 7, 2009 [3]

The Internet in the context of agriculture informatization.

Internet communication capabilities are :

- e-mail service is the most widespread, is a real service to farmers, facilitating rapid contact between themselves or with various institutions. It can be used to disseminate the results obtained by some farmers, accurate information is usually one of the conditions for success.
- Discussions on-line: - SEND service, service TALK; service IRC, ICQ service.
- Conference call involving online transmission of images, sounds or voice in real time (as in TV or radio).

Internet adoption by farmers is not spontaneous, the technology must be known and learned, adapted to specific agricultural production and integrated effectively.

The average specific activity of each farmer requires specific solutions in information technology adoption, and also as an obstacle in the rapid spread of agricultural extension on the Internet. The problem is not the cost of access to the Internet, but the cost of salaries of those who offer Internet consulting, and maintenance of servers that provide accurate and factual information.[6]

The benefits of Internet use by farmers and agricultural extension through the Internet may be as follows[4]:

- reduced cost of information found in the network;
- Obtaining information in real time;

- Access to relevant information sources;
- Exchange information and ideas;
- Collaboration between farmers and experts it easy;
- distance learning opportunities;
- Finding information on market conditions, costs of inputs, plant protection;
- access to various services and even the possibility of making various acquisitions over the Internet.

The Internet and information technology arena by the rapid adoption of many Internet-specific agricultural activity has created a wide range of opportunities, agricultural extension is one of the branches that are widely using the Internet to provide specific services and dissemination of results.
Computerization on the state farms throughout Europe and the impact of the Internet in farm management can draw the following conclusions [5]:

- In Germany, information technology is widely used in agriculture, most farmers with PCs connected to the Internet and used e-mail and Internet
- Germany has set up a national network of farm accounting data FADN (Farm Accountancy Data Network and) and made efforts to harmonize these data with the requirements of European standards in order to include them in the European FADN database.
- France has been implemented in the modern concept of "knowledge intensive agriculture based on" concept to meet the challenges of food security, development of farms and farmers' income support. Use of ICT and the Internet in farm management activities are supported by ACTA Informatique (Association de Coordination Technique Agricole).
- In Italy is also a focus on implementing information and communication technologies in agriculture. Investment in information technologies increasingly find their place in the investment plan of farms producing agricultural goods certificates.
- In England you can see a substantial difference, the use of computer in management activities, between categories of farms: farms that have as main activity the growth of cattle and sheep farms and small areas are far behind the big farms to arable cultivation and handle cattle at the same time.

Computerization of the farms on a European stage

Computerization on the state farms throughout Europe and the impact of the Internet in farm management can draw the following conclusions[5]:

- In Germany, information technology is widely used in agriculture, we can identify the following classes of information systems for management of agricultural production:
  - Recording systems (management);
  - Decision support systems;
  - Systems for production planning and tracking;
  - Statistical processing systems;
  - Integrated systems, which include recording systems, and tracking systems for production planning and decision support systems.

CONCLUSIONS

1. As the main barriers to adoption of ICT use in farm management in Europe has seen a lack of funds, lack of time would be devoted to this activity, such technological barriers (hardware obsolete, poorly developed telecommunications infrastructure in rural areas), lack confidence and skills.
2. Probably the most important reason for low usage is that most of the farmers (in many parts of Europe) made the whole day manual activities in their farms. After such a long and tiring day computer use is not appealing. Training was also identified as one of the dominant factors mitigate common ICT adoption in European agriculture.
3. Another explanation for the slow adoption of computerized management is the use of computerized management tools produce general information, while farmers are forced to make decisions as to specific activities and extensive use of intuitive thinking.
4. Computerized management tools should be designed to produce specific information besides the usual general information. Thus, these instruments should not only provide an indication of a problem but also what will happen to the farmer's current production, financial circuit, etc..
5. Funding to promote the adoption of ICT in agriculture is justified and should be considered as an element of public concern that must overcome the interests of farmers.

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