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EFFECTIVE CONFIGURATION AND INTERFACING BETWEEN RANCHER-OWNED MICRO COMPUTERS AND CENTRAL COMPUTER NETWORKS

by

Harlan Hughes[1]

Introduction

Wyoming's farmers and ranchers are starting to express an interest in micro computers. While we do not have any data on the number of farmers and ranchers presently owning Micros, College of Agriculture Specialists collectively know of several ranchers who presently own micro computers. Several other producers have contacted us about the potential of micro computers in their own operations. Wyoming ranchers generally have two applications in mind for micro computers. They are (1) herd performance accounting and (2) business accounting.

Potential Applications for Micro Computers

We in Wyoming believe there are three applications that will justify a rancher spending $4000-5000 for a micro computer system. The three applications are:

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[1]Harlan Hughes is AGNET Coordinator, University of Wyoming, Laramie, Wyoming. Paper presented at 1980 AAEA Symposium entitled, "Some Concerns and Needs in Assisting Farmers To Use Computer Techonology".

(1) Ranch Business Accounting

(2) Herd Performance Data

(3) Payroll Accounting

Payroll may or may not be a viable application depending on the size of the operation.

Our Animal Science Division is presently working on a herd performance accounting system. Ranchers are excited about automating their 3X5 card system that gives them the management information several weeks after they had to make the management decision. They are excited about a micro system that can provide management reports before they have to make decisions.

I have some reservations about how serious ranchers are about doing their own business accounting on their micro computer. Once a rancher starts doing his own business accounting and inputing all the data, some may still prefer to have their public accountant continue doing their accounting (even at the $1500-2000 annual fee). Will a rancher spend the time necessary to enter his accounting data into a micro? I don't know. My experiences in Wisconsin with a batch computerized accounting systems indicates this getting ranchers to sit down and input their accounting data will be a real challenge.

Hardware Requirements

A Ranch Accounting System, a Herd Performance System and a Payroll System is going to require a disk oriented micro computer system. A dual disk system will be a necessity so that back-up copies of disk files can be made. A good printer is also needed for printed reports and certainly is needed for audit trials. A cassette recorder is often needed to be able to obtain outside software and to read it into your machine. Some software is transferred directly by disk but cassettes are more common. The processing requirements of applications will require at least 32K to 48K of memory.

Thus, a rancher should plan on spending at least $4000-5000 for a 32K or large system with dual floppy disks and a good printer. While this is considerably more than the $500 Radio Shack advertized on TV, most ranchers are not scared off by the price. Our present challenge is to educate ranchers on how to perform and understand a farm ranch business analysis so that ranchers can benefit more fully from their micro computer systems.

Expanding the Use of Micros

By spending another $300 or so, producers can get an acoustic coupler for their micro computer and access the Computerized Management Aids available on AGNET[2/], TELEPLAN[3/], and/or CMN[4/]. By purchasing an acoustic coupler and operating their micro as a "dumb terminal", they have the best of two worlds:

(1) Use of their micro for stand-alone-processing of routine applications such as accounting, herd performance and payroll.

(2) Access of centralized libraries of Computerized Management Aids located on AGNET, TELEPLAN, and CMN.

Accessing Agricultural Information Networks

Ranchers are expressing considerable interest in the Agricultural Information Network now available on AGNET. The central computer is being used as an electronic filing cabinet for a large volume of the Agriculture College's information base. Users are provided an up-to-date menu of the information filed in the computer so they can select only the information they want to see.

Wyoming ranchers can now use their micro computer to:

2/ Harlan Hughes, "AGNET State and Regional Programs" 9 page mimeographed handout, University of Wyoming, Laramie, Wyoming.

3/ Steven Harsh, "A Program Report on Teleplan Activities", Dept. of Agricultural Economics, Michigan State University.

4/ Janet Faith, The Computerized Management Network", CMN Coordinator VPICSU, Blacksburg, VA.

(1) Retrieve today's market prices. Historical prices are also available for comparaison. Gene Murra, South Dakota State University, provides producers with a weekly analysis of cattle price trends and what is causing the trend.

(2) Obtain current outlook reports and specialists interpretations of the outlook. For example, a Nebraska hog farmer commented publicly how he pulled off Bob Price's (Western Livestock Market Information Project) hog outlook before it was released in his local newspaper.

(3) Check to see who in his county or surrounding counties (or states) has hay for sale, pasture for rent, sheep for sale, or seed for sale.

(4) Review current, timely newsreleases available from his own Land Grant College as well as the other five Land Grant Colleges on the AGNET system. USDA, as well as Ohio State (Walley Barr), are putting on current information useful to Wyoming Producers.

(5) Send electronic mail between the rancher and his local County Extension office. Written recommendations can be transmitted immediately from County or State office to the rancher.

(6) Transmit range (drought) conditions to County, and State Extension offices as well as to the Regional Western Livestock Market Information Project office in Denver. Information can easily flow both from producers to County Extension office (and on to state campus) as well as from Campus to County producer. The Green Thumb project in Kentucky is also capitalizing on this two-way information flow.

Adoptive Rate

Once a rancher is exposed to all of the potential applications of his micro computer and when we in the Land Grant System get a good set of agricultural software for the micros, Wyoming ranchers are going to adapt micros at a

fairly fast rate. I would fully expect 25 percent of all ranchers in Wyoming to own their own micro computer by 1990. I expect 10 percent of the ranchers to have micro computers by 1985. I just hope that we in the Land Grant System can get organized to develop micro software that will meet ranchers' demands. If we don't, non-agriculturalists are going to develop agricultural applicators. The Land Grant System has the agricultural knowledge base and the comparative advantage for designing agricultural applications. What the Land Grant System lacks at the present is the commitment to meet this educational challenge.

SUMMARY

A Micro computer equiped with an acoustic coupler can now communicate with computer networks such as AGNET, TELEPLAN, and CMN. Specialists at several Land Grant Institutions are maintaining these programs libraries and their related data bases. Ranchers can access these libraries and data bases on a real time basis.

A relatively new and growing application for producer owned micro computers is the accessing of Agricultural Information Networks. Today a producer can use his micro computer to: (1) retrieve current market prices; (2) obtain current outlook and situation reports and specialists' interpretations, (3) identify who has hay for sale, pasture for rent, and sheep for sale; (4) retrieve timely newsreleases from his Land Grant College; (5) send and receive ELECTRONIC MAIL from his county extension office; and (6) transmit emergency conditions such as the drought situation to county and state extension offices.

Informational networking directly to producers may well prove to be as valuable as the more traditional problem solving applications. The key, however, is the rancher having an acoustic coupler on his micro computer system.

8/20/80

TITLE: Some Concerns and Needs in Assisting Farmers to Use Computer Technology

MODERATOR: Buel Lanpher, Farm Management-Program Leader, SEA-E

SPEAKERS: Steve Harsh, Michigan State University
"Procedures and Processes for Exchange of Educational Materials and Ideas Between States and Coworkers"

George Greaser, University of Arkansas
"Information Needs of Farmers Related to Micro-Computer Technology"

Harlan Hughes, University of Wyoming
"Effective Configurations and Interfacing Between Farmer Owned Computer Equipment and Computer Networks"

ABSTRACT: We are becoming increasingly aware of the advantages for exchanging materials and ideas in the computer area, including better utilization of our scarce resources and the hybridization of ideas and concepts that take place with interaction among professionals. There are several means by which an exchange can occur, including the sharing of computer source code and modeling concepts, supporting educational materials, and implementation experiences. Other alternatives include the multi-state development of software, and accessing software on other states' computer systems. For farmers who are interested in acquiring micro-computers, it is important to determine how they expect to use them before looking at the hardware, software, and communications aspects. Several key hardware characteristics should be carefully analyzed, such as: memory size, operating systems, and output mechanisms. A limited amount of agricultural software is available and it should be developed to run on a common operating system. The computer should be able to communicate with a host system to enable a two-way transfer of data and software. For transferring data a producer can use his micro-computer to: 1) retrieve current market prices, 2) obtain current Outlook and Situation Reports, 3) see who has hay or other items for sale, 4) retrieve timely news releases, 5) send and receive electronic mail, and 6) transmit drought conditions or other emergency agricultural information. Information networking directly to producers may well prove to be more valuable than the more traditional problem-solving applications.