Computer Evaluation for Agriculture

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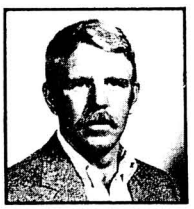

ABOUT THE AUTHOR: *Rick Allen operates a 450- to 500-head commercial cow herd. The mother cows are all Angus and individual records are kept on each. Allen endeavors to purchase good black bulls; no females have been introduced into the herd for the past ten years. The ranch operates on both deeded and leased land (about 6,000 and 80,000 acres respectively); it takes two to six people to operate the ranch depending on the season. Allen has been using a microcomputer for the past two years. His accounting system, alone, includes 101 accounts plus separate accounts for each piece of machinery and vehicle.*

The adoption of new technology is always a decision that requires planning and thought. The computer revolution has faced farmers and ranchers with a tougher decision making process than perhaps any other technological advances.

I have been using a microcomputer the past two years, utilizing it to keep and analyze information on our 450-head commercial cow-calf operation. Herd identification and production records are among our chief management tools and, in the last two years, the computer has made a large contribution to the ranch in the form of better, more timely decision making. Accurate information is analyzed with a much greater degree of scrutiny than formerly possible with a manual system. Herd records, time management, budgeting, machine management, word processing, accounting and spreadsheeting are some of the ways the computer is used.

In the following discussion of computers for farm and ranch use, I hope to let my experiences benefit you, as I feel computers have a great potential in the farm sector.

Information and misconception each abound in relation to the computer as a tool for agricultural producers. Many producers are groping for a way to evaluate the potential of computers in their operation, but at this time such evaluation is a rather difficult exercise. There are several reasons for this. The most limiting one is lack of standardization in agricultural production.

Each farm or ranch has its unique and time-proven method of handling record keeping chores. Methods vary almost as widely as farms and ranches, and this variation compounds itself with diverse geographical and meteorological conditions of the United States.

Are these conditions much different than the rest of the business world that seems to be taking advantage of the power of computers? In many ways there is a great difference. Accounting is an example that shows a substantial variation between agriculture and the rest of the business world. Accounting systems up and down Mainstreet, U.S.A., are standardized in many ways, while if 20 farmers or ranchers in the same county, U.S.A., were polled on their accounting systems it is unlikely that any five would be compatible. The same scenario holds true for crop records, cattle records, machinery records, pesticide/herbicide records or any form of records kept on an agricultural operation.

The lack of standardization in agriculture makes evaluation of the computer a difficult, but not at all insurmountable, task. In fact, it may well be one of the most profitable endeavours upon which a producer can embark.

Good records a prerequisite

Agricultural is one of the most capital intensive sectors of the economy and, at the same time, may be one of the more poorly documented and analyzed sectors on the individual producer level. Farmers love to farm and for the most part dislike pushing paper. However, some producers have learned that pushing paper is an essential part of their operation. They have developed the ability to make good decisions based on good records. These are the people for which a computer can do the most. While lack of standardization is still a factor, those who have learned the value of good records can make the most efficient use of available computer programs. These producers have the knowledge of their operations to design their own programs or be able to provide design information to a competent programmer.

The question always arises, what advantage would a computer have if the record keeping is already being handled manually? Producers who already have records should be able to attribute a cost to keeping them. For example, it might require about 30 days a year to keep accurate, meaningful records on a 500-head cow-calf operation that grows and harvests enough feed to maintain those numbers, as well as complete production records and machinery records to make management decisions.

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These records may affect the outcome of an annual $300,000 sales figure. That makes each day of the year worth $822 or the record-keeping time $24,660.

Computers are valuable because they can process information quickly and accurately. A computer could reduce the time it takes to update the production records on the 500-head cow herd from four days to one day. The associated savings would be $2,466. Too simplistic? Yes, there are other factors, but this example is worth consideration.

From the above example, a reasonable conclusion can be made. For most farming operations it is doubtful that a computer is cost effective for only one application. This is not always true and the size of the operation might make a computer cost effective for the accounting system only. However, most producers will want to evaluate pos-

sible uses in several areas, including accounting, herd records, machine records, word processing, crop records, time management, market information and weather forecasts. This list is by no means exhaustive and, as experience increases, other uses will become apparent.

The versatile spreadsheet

Since the computer became available to almost any business, one type of program has probably sold more computers than any other. Spreadsheet programs are one of the most versatile programs available to the computer user and are particularly adaptable to the agricultural sector.

A spreadsheet is a large piece of paper marked off in rows and columns. A standard tool in the business world, spreadsheets are used to keep track of a multitude of financial data. The computer enhances this traditional role of the spreadsheet by allowing automatic and rapid revisions to be performed. A feeding budget provides a good example. There may be four different components to the ration and four different costs of these components. Other factors such as rate of gain, death loss, interest cost, yardage fees and cost in are other factors affecting the budget. With a pencil and paper spreadsheet it is no great task to figure one budget using these factors. A computer spreadsheet program will make it possible to figure 10 or 20 different combinations of these factors faster than the original one on paper.

This type of spreadsheet analysis can be done very effectively for numerous agricultural activities. They make it possible to make projections accurately using a greater number of variables than most producers are willing to do by hand. Sometimes the cost savings from this type of computer use in itself will make a computer cost effective.

Questions to ask

Evaluation of computers for cost effectiveness is little different than evaluating a new piece of equipment. In the case of equipment evaluation, a producer knows what questions to ask and answers from pertinent records should be the deciding factor. The right questions to ask about a computer are not that easy for most.

There is one basic and very important factor that must be addressed in the initial evaluation of potential computer use in your operation. Tractors have been around for more than one generation and are familiar and friendly tools to the agricultural sector. Likewise, computers have been around for years, but not in a form accessible and affordable by almost anyone desiring one. In the very recent five years or so, computers have become the "in thing" and anyone can have one if they so desire.

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This is the point where difficulties often become evident. Grandpa might well have parked the new tractor in the yard and used the team of horses to mow the hay. The darned tractor was too fast and he was not as familiar with it as the mules. Today, the same thing is happening with computers. The family coat closet also stores that magnificent computer purchased with high expectations but little planning and forethought.

Most people have heard of or experienced the generation gap. The computer is the victim in some cases of a technology gap. Children do not seem to be affected, but parents often are. The problem is the kids do not understand the farm record-keeping system, so the computer often is relegated to playing games or the coat closet.

The evaluation process should begin with some questions:

1. Are the records in the operation in top-notch shape? If the answer is maybe or no, then do not plan for or expect a computer to get them in order. Computers are very logical and well organized and information intended for their manipulation must also be logical and well organized.

2. What tasks will the computer be expected to perform? To buy a computer and not have specific plans for its use is asking for disappointment. Any good computer

salesman will ask what intended uses are planned by the prospective buyer. After defining such tasks, a search for programs that will accomplish them is a logical step. Beware of the salesman who immediately begins a dialogue on the virtues of a certain machine (hardware). Only after finding and testing programs (software) that will instruct the hardware to do the appointed task should hardware be discussed.

3. If the prospective buyer gets through step 2 and is still interested, question 3 will be: Am I willing or is one of the employees available and in the proper frame of mind to take a new and unfamiliar tool and make it work under my conditions? Time is an important consideration, as it will take a considerable amount of up-front time to develop a viable, productive computer system. The amount of time depends on the complexity of the tasks assigned in question 2. The correct frame of mind is equally important. There will be frustrations and disappointments at first, and the technology gap must be bridged.

4. The bottom line is always of interest and is the reason for all this in the first place. Will a computer be cost effective? A partial answer to this question should have been provided by question 1. Complete knowledge of the costs of doing business is one sign of a top-notch set of records. Doing business includes costs for keeping records and these costs must be considered in the computer decision. The above discussion of spreadsheets may well be a factor that will make a computer cost effective. It may even be wise to consider a positive factor for educational experience. Those who use computers now will be very well trained to operate completely automated machines of the future!

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As with many financial decisions in agriculture, the final decision may have to be 90 percent fact and 10 percent optimism! There are several other steps that might prove helpful in making a good evaluation of computers for your operation.

1. Visit with other producers who have succeeded in integrating a computer in their operation. And equally important, visit with someone who has had a bad computing experience.

2. Utilize the resources available. These might include universities and consultants whose initial fees seem steep but are often cheaper than trial and error.

3. Many communities have computer user groups that can offer an introduction and follow-up help.

Complete knowledge of the costs of doing business is one sign of a top-notch set of records.

4. Subscribe to one or more computer magazines. They will give you a feel for the new and exciting world of computing.

5. If you are a complete novice, deal with reputable dealers and brand name merchandise.

In summary

In the end, the chief factor which will decide the profitability of a microcomputer is the person or persons embarking on the project. Any business that must make decisions influenced by multiple factors can benefit from a computer. When the check for these decisions is critical, the computer can make the difference between success and failure. However, these things are dependent directly upon the peopie involved and their determination to make new technology work in their favor.

Throughout this discussion I have attempted to forego the temptation to give my thoughts on software and hardware. The fact is there are many good programs and computers available, just as there are many good implements and tractors from which to choose. The evaluation of each should be based on thorough thought and planning. Impulse should be avoided. AJ