North Central
Region
**FARM MANAGEMENT
EXTENSION WORKSHOP**

FARM MANAGEMENT:
CHALLENGES AND RESPONSIBILITIES
FOR A NEW AGE
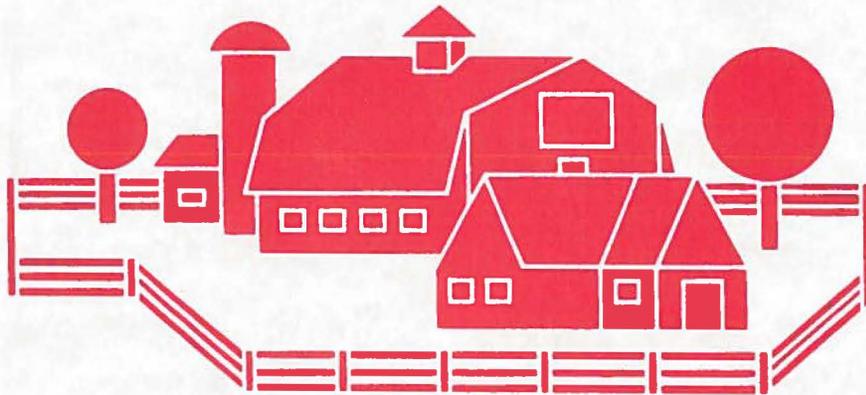
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HIGH-TECHNOLOGY DELIVERY:
REAL OR FANCIFUL IN THESE TIMES

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Introduction:

I am happy to be talking about computer technology and its potential within extension farm management, but I must admit that I consider this a tough audience.

John Schmidt had agreed to take this assignment, but then discovered he had a conflict of dates with an assignment in Salzburg Austria. John has been part of an ECOP task force assigned to study this question. He did leave me a copy of a working paper entitle "Electronic Technology: Impact on Extension Delivery Systems". This document summarizes the work of a special Extension Committee on Organization and Policy (ECOP) and the Extension Service USDA task force charged with examining the roll of emerging electronic technologies. I'd like to demonstrate some electronic techniques we've found useful at NCCI and summarize the ECOP report.

Personal Computing & Traditional Delivery Systems

Personal computers have created many new opportunities to enhance the quality and quantity of information delivered through traditional methods. I'd like to illustrate software in four specific area. They are bibliographic database management, concurrent processing, presentation graphics, and word processing.

Harlan Hughes and others have observed that computer tools when used with imagination were helpful for much more than individual problem solving. The following table lists 5 traditional extension delivery techniques. The X's indicate a potential "High Tech" application.

Fig 1.SOFTWARE APPLICATIONS IN FARM MANAGEMENT.

	Textual DBMS	Concurrent Processing	Presentation Graphics	Word Proc.
Newspaper	X		?	X
Broadcast Radio	X			
Publications	X		X	X
Meetings & Demos	X	X	X	
Personal Contact	X	X	X	

I'm using an Electrohome projector with a Compaq computer for this demonstration. The Compaq has 640K RAM and 2 floppies. The software I've used for my overheads is called Pyxel Visuals. The other pieces of software I will be demonstrating is FYI 3000, Side Kick, Memory Shift, and Word Perfect.

Textual Database Management:

NCCI staff maintain two databases with FYI 3000; a computer magazine citation database, and a commercial agricultural software index. Both are accessible by anyone on our Novell local area network. How many times have you said "I know I've seen something on that before, but I don't remember where".

FYI is a free form textual database management system. It allows text entered from any word processor to be indexed as part of a usable database. Citations can be single paragraphs of text, separated by blank lines, or they can be annotated to start with a *C and end with a *K. Each citation will be indexed either on the whole content of the entry or on just key words you designate.

An example citation would look like this:

*C
Electronic Technology: Impact on Extension Delivery Systems

A task force report summarizing the major findings on electronic technologies in the next 5 years.
*K
Computers / Extension / 1985
*E

Three features separate FYI from other DBMS products. It is the only product we have found that allows the database to consist of several text files extending over multiple floppy disks, and it is the only one we've found that automatically maintains the key word thesaurus. We use both FYI and dBASE III to access information from our database of commercial agricultural software.

Concurrent Software:

Concurrent software for personal computers currently falls into two categories. We use them both. The first category is desk top accessories - a calculator, note pad, calendar, etc. The second category actually partitions RAM and allows multiple programs to be resident in these different partitions. This technique can be very useful for demonstrating techniques with a spreadsheet and then switching back to another Pyxel Visual overhead.

Presentation Graphics:

Presentation graphics can be used either in conjunction with a video projector, or in the preparation of standard transparencies. The process involved in preparing a video overhead is the same in either case. In the case of Pyxel Visuals a companion program called "Showtime" allows several queued images to be displayed sequentially. If the graphic will be used for a transparency, the video output can be sent to a standard dot matrix printer and processed through traditional methods.

Word Processing:

I've saved this one until last because I think it's the best. I've been
addicted to computer assisted writing since 1975, although I will admit that
trying to write with a line editor is probably more work than it's is worth.
The current state of the art word processors are so good that they rival more
expensive dedicated word processing equipment. NCCI has reviewed more than a
dozen top word processors and recently adopted Word Perfect version 4.0 as the
standard on our network.

Word Perfect has several attractive features which set it apart from most
others.   Some of my favorite features include:

        Dynamic page break display on screen
        Supports Multiple Columns
        Powerful 80,000 word Dictionary
        Easy transfer into ASCII
        Easy conversion from Wordstar
        Outlining Mode
        Special Functions tied to function keys
        Supports wide many printers including the HP Laser Printer
        Footnotes / End notes
        Automatic Table of Contents & Indexing
        Very Powerful Macro capabilities

I've just finished using Word Perfect extensively to produce a printed version
of the NCCI commercial agricultural software database. Very few other word
processors have its power, speed, and versatility. We all have developed our
own routine for writing papers. Both John and I have found that the writing
process is greatly enhanced by typing the first draft ourselves. If you're not
a touch typist, perhaps a few hours invested in learning would pay high
dividends.

These "High Tech" delivery tools are available today and awaiting your
adoption. Other, more powerful new delivery technologies are also going to
change the way we do business. I will now summarize the ECOP study and its
recommendations for the future.

HIGH   TECH   DELIVERY   METHODS

The three major technologies examined by the committee were electronic
publishing, tele-conferencing, and computer networking. These three technol-
ogies were examined in light of the three traditional Extension Service
functions:

    A.Information Delivery
    B.Educational Delivery
    C.Problem Solving

Various electronic information delivery techniques overlap the three functions
in Extension work. The committee emphasized that new electronic technologies
will enhance Extension and amplify the rich knowledge base of the land grant

system and the Extension workers who carry out this service.

By comparison to any other industry, the progress of the computer and communications industry is staggering. Transistors currently cost less than 1/100 of a cent - a 1,000 fold decrease in the past 25 years. Similar drops in cost and increases in performance are being achieved in several fields of electronics and telecommunications. Digital transmission speed has increased from 100 bits per second in 1952 to over 1 billion bits / second using fiber optics in 1984. Future price reductions and performance increases are expected. As a result, the costs of these new technologies will become reasonable for educational institutions, businesses, and other segments of society, including Extension.

I. Electronic Publications:

The report states "Electronic publishing was the term used to describe the use of captioned television and video text services in delivering textual information to the public. In addition the term electronic publishing is used to describe the application of electronic technologies to the traditional text media which includes newspapers, magazines, pamphlets, publications, and newsletters. With expanded transmission speeds and greater processing power textual material may be delivered directly to the consumer via computer display devices bypassing the traditional printing process in the future."

    Advantages:
        Simple Content
        Easily Updated Material
        Reduced Storage Costs

    Disadvantages
        Limited Graphics
        Phone and computer costs involved

    Best Users:
        Timely Information
        Limited print orders

II. Teleconferencing

    Audio conferencing has been used for many years. The addition of full motion visuals, is a much richer environment for supporting information and educational delivery.

Audio / Audio/Video

    Advantages
        Multiple Locations with same information at same time
        Good accessibility
        Useful where problems affect many people

Disadvantages
 Must be structured
 Limited Interaction
 Technicians Required
 Not face to face

Best Uses
 Maximize use of expertise
 Limited available staff
 Content Delivery
 Where great distances are involved
 Task forces / Technical Groups

III. Personal Computers and Computer Networks

Personal Computers and Computer Networks are the major thrusts moving society
into the information age. Costs will continue to decline while capabilities
rapidly expand.

Advantages
 Information Specific
 High speed possible
 High potential for education
 High potential for problem solving

Disadvantages
 Network maintenance required
 Lack of software?
 Limited clientele usage
 Socioeconomic limitations
 Training required

Best Uses
 Simulations
 Data base access
 Electronic Mail
 Time dependent information delivery

Policy Issues and Recommendations:

John Schmidt, Jim McGrann, and 16 others served on the resent ECOP task force.
Based on its survey of the emerging electronic technologies, the task force
made the following recommendations:

1) It is important for the Extension System to accept the philosophy that
the adoption of emerging electronic technologies will enhance its program
delivery capability. The system MUST keep pace with the private sector
in this regard; failure to do so is to endanger its very future.

2) These new technologies should be integrated with care into existing
programs, policies and organizational structures and management systems
throughout the entire Extension System.

3) Regional, inter-regional and national software and database activities should be encouraged in selected disciplines

4) It is especially imperative that Extension programs initiate and maintain a leadership posture with commercial agriculture in electronic technology applications.

5) We request the Administrator of ES/USDA to establish a support system to: (1) provide information exchange on state of the art applications of electronic technology in Extension; (2) evaluate national database development and utilization opportunities; (3) explore potential areas for production of educational materials in computer controlled video disc formats; (4) assist states in teleconferencing activities; and (5) foster interstate and inter-regional coordination in conjunction with the existing regional centers including the area of software evaluation. We urge the reallocation of existing resources and / or the acquisition of new resources to bring this about.

6) The regional computer organizational models should be reviewed in terms of their potential in serving Extension needs for implementing electronic technology applications.

7) The adoption of electronic technology throughout Extension will call for new personnel skills and a significant review of personnel policies. Each state along with ES/USDA should review their personnel policies in such areas as (1) staff training and development opportunities; (2) minimal skill requirements for staff recruitment; (3) adequate staff recognition in the form of promotion and salary adjustment; (4) organizational patterns; (5) staff supervision; and (6) consulting activities

8) Extension will increasingly be asked to release its informational and educational materials to private sector electronic publishers for general distribution. Extension should cooperate on the assumptions that (1) all media outlets are treated equitably with respect to access (availability, format, timeliness, etc.); (2) the materials provided are not altered by the publisher when Extension is cited as the source; (3) the Extension material published is clearly disassociated from implied product endorsements due to accompanying product advertising; and (4) provision is made for routine updating of information .

9) Despite occasional challenges from the private sector, Extension faculty and support staff have a clear and continuing need to develop computer software of two types; (1)software in support of the educational and problem solving mission of the Extension , for use by Extension personnel in their routine programming activities; and (2) prototype software promising to be of direct use by Extension clientele (farmers, agribusinesses, households, etc.) and not available through commercial sources.

10) Each state should assess the availability and adequacy of commercial computer services and software available to its end user clientele, in a conscious effort to both avoid direct competition with private business

interests and to meet clientele needs not served adequately by the private sector. It will be important to be flexible in this regard, as private sector capabilities become more wide spread over time.

11) The ES/USDA-ECOP should establish a continuing Task Force for support of Extension program delivery using electronic technologies. The Task Force should continue to review policy issues and recommend administrative thrusts for the application of new technologies to the Extension mission.

I urge you to reflect on the recommendations of the ECOP task force and consider how Extension farm management can best utilize the capabilities of high tech delivery systems. These high-tech delivery systems are no longer fanciful; they are real tools which have great potential as teaching aids and information delivery vehicles.

I will also appreciate your comments on how NCCI might team with farm management personnel to work on a special project such as creation of a shared database, or development of a financial management training packages to be used by all, or sponsoring a workshop specifically targeted for computer applications in farm management. I attended this workshop three years ago at Purdue. I distinctly remember hearing Dr. Schmidt outlining the steps involved in obtaining NCCI funding for regional projects. His closing comment was "the early bird gets the worm". Is anyone listening?