

Information Management for Your Farm

Facilitator's Guide

Timothy L. Cross
Robert P. King
Craig L. Dobbins
Earl I. Fuller



UNIVERSITY OF MINNESOTA

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CONTENTS

Preface	1
Chapter One: Introduction	2
Chapter Two: Conceptual Foundations	3
Chapter Three: Before the Workshop	6
3.1 Target Audience	6
3.2 Publicizing Your Workshop	7
3.3 Registration for the Workshop	7
3.4 Facilities	9
3.5 Time Requirements	10
Chapter Four: Presenting the Workshop	11
4.1 Workshop Introduction and Management Profile	11
4.1.1 Workshop Objectives and Agenda	11
4.1.2 Farm Summary	13
4.1.3 Managerial Goals	13
4.1.4 Management Style	15
4.2 Critical Success Factors	17
4.3 Strengths and Weaknesses	20
4.4 What's Possible?	22
4.4.1 Basic Alternatives for Information Management	23
4.4.2 Management Support from an Information System	25
4.4.3 Hardware and Software for Computerized Information Systems ...	28
4.4.4 Converting to a Computerized System	31
4.5 Objectives and Strategies	33
4.6 Workshop Evaluation	34
Chapter Five: Workshop Follow-up	35
References and Resources	38

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PREFACE

This publication is a step-by-step guide to a workshop on *Information Management for Your Farm*. It provides background on the need for this workshop and on its conceptual foundations. It suggests and leads facilitators through pre- and post-workshop activities as well as the actual workshop curriculum.

This guide is designed for use by the community of farm advisors. This includes extension specialists, agents and educators, farm management consultants, community college instructors, information system developers and consultants, and other agriculture professionals who may advise farmers on information management.

Information Management for Your Farm workshop materials were developed through the NC-191 project, north central regional re-

search on farm information systems. These materials are designed to help farm managers improve their information systems. Workshop participant evaluations to date suggest that the workshop provides a useful structure for evaluating and improving farm information systems. Results from the workshop can also provide data on farm information needs, which is important for future developments in farm information systems.

Workshop facilitators are encouraged to provide feedback on these materials, as well as their experiences in conducting *Information Management for Your Farm* workshops. Send your comments to: Robert P. King, Department of Agricultural and Applied Economics, University of Minnesota, 1994 Buford Avenue, 130 Classroom Office Building, St. Paul MN 55108-6040.

CHAPTER ONE: INTRODUCTION

Information is fundamental in the management process. Its effective use can help farm managers control costs, increase profits, and use their time more efficiently.

Information management technologies — computer hardware, computer software and telecommunications systems — are steadily becoming more powerful and less costly. At the same time, new management services are making it easier for farm managers to draw on the production, marketing, and financial management expertise of others. This means farm managers are more likely than ever to find information technologies and information services that meet their needs. But, it also means that farm managers face increasingly complex and difficult choices regarding information management.

As the range of alternatives for information management expands, the changing business environment is placing new burdens on managers for record keeping, for communication with suppliers and market outlets, and for planning and analysis. For example, employment record keeping requirements have expanded greatly as farm labor has become subject to unemployment and social security taxes and income tax withholdings. Similarly, agricultural chemical use records are now required.

As direct marketing by farmers increases, many producers are also turning to direct mail advertising and the maintenance of closer ties with their customers. Doing this effectively requires improved records and more sophisticated information processing capabilities. And, as farms become larger and adopt new organizational structures to involve multiple family members, the need for more sophisticated planning tools and for improved communication among members of the management team increases.

Many farm information systems were developed before the emergence of these new information management needs. As a result, there is a need for many farmers to evaluate their current information systems and consider ways to improve them.

The workshop materials presented in this facilitator's guide will help farmers identify their information needs and improve their farm information systems. These materials are based on methods that have been successfully used to identify information system requirements in non-agricultural businesses. These materials are also designed to support a sound, workable process that extension personnel and private consultants can use to help farmers determine information system requirements. Work sheet data developed by participants during the workshop can potentially serve as a source of data for farm information systems research.

Information Management for Your Farm workshops are designed to help managers in three ways:

- (1) The workshops focus attention on information needs
- (2) The workshops acquaint farmers with possibilities for improving their information systems, and
- (3) The workshops help farmers develop a long range strategy for making improvements in their information systems.

The *Information Management for Your Farm* program and the supporting materials provided in this volume center around a series of exercises and activities for members of farm management teams. Group discussion is used extensively, since farmers often have much to learn from each other.

Chapter Two of this facilitator's guide briefly reviews the conceptual foundations supporting the workshop materials. Chapters Three, Four and Five are a step-by-step guide to the preparation for, presentation of, and follow-up after an *Information Management for Your Farm* workshop.

Materials used in the workshops are illustrated throughout this guide. They include publicity materials, handouts, exercises, and overhead transparencies. Full-size master copies for all work sheets and transparencies are available from the authors.

CHAPTER TWO: CONCEPTUAL FOUNDATIONS

A farm information system can be defined in broad terms as the collection of manual and/or computerized records, planning tools, procedures, outside services, and technologies used in a farm business to gather, organize, store and process information. People, including managers, family members, employees and outside consultants are also parts of the information system.

Every farm has an information system. Some farm information systems are more formally organized than others. Some are computerized. Others are not. No single information system is right for every manager. Rather, the characteristics of a "good" farm information system are closely related both to the characteristics of the business and to the management styles and skills of the people involved in the farm operation.

The overall structure of these *Information Management for Your Farm* workshops is based on the framework for information system planning proposed by Gordon Davis and Margrethe Olson in their book, *Management Information Systems: Conceptual Foundations, Structure, and Development* (pages 447-450). They identify four major components of a long range information system plan:

- (1) a statement of goals and objectives for the information system accompanied by a description of the major elements of the information system,
- (2) an inventory of current capabilities,

- (3) a forecast of developments that may affect the plan, and
- (4) a specific plan for improving the information system through investments in hardware, software, training, office facilities, and outside services.

Goals and objectives for an information system should be based on goals and objectives for the farm business, since an information system is simply a tool that helps managers achieve their business objectives. Similarly, the major elements of a farm's information system should reflect the enterprise mix and division of management responsibilities in the farm operation.

Information system goals and objectives should be specific enough to provide definite direction for future improvements, yet flexible enough to permit response to changing opportunities. For example, there might be two key objectives for the information system of a large cash grain farm. These could be to control production costs, and to enhance revenues and manage price risk through the implementation of a marketing strategy. Matching those objectives, two important application subsystems in this farm's information system might be a field record system and an on-line market news service.

In any planning process, a good understanding of the current situation is as important as a clear vision of what needs to be achieved. The inventory of current capabilities should be a

realistic assessment of how well the current information system is meeting goals and objectives for information management. For example, the information system of the hypothetical cash crop operation described above might include a description of existing field record data and an evaluation of marketing management skills needed to make effective use of more timely, detailed market information. The inventory should also identify the "people" components of the current information system, detailing who keeps records, who uses information, and major off-farm sources of information.

The forecast of factors expected to affect the information system plan should include descriptions of possible changes in the business that could, in turn, alter information needs. It should also include some assessment of changes in information system technology that are likely to add to the range of alternatives for managing information. With the cash grain operation, for example, the possibility of joining a commodity marketing pool would be a major change that could greatly reduce the need for marketing management information. Similarly, the possibility of shifting to a new operating system for personal computers would be a technical change that should be considered by farmers evaluating hardware and software purchases.

Finally, the specific plan for information system investments should identify desired improvements in existing information systems components and processes, and new resources that will be needed to meet goals and objectives for improved information management. The plan might include hiring outside services, improving manual record keeping, purchasing computer hardware and software, and/or investing in training. The plan would also include a timetable for implementation.

Information Management for Your Farm workshops place particular emphasis on the first three components of Davis and Olson's long range information system plan framework. It

is usually not possible in a group setting to develop detailed, individual plans. However, it is possible to establish a good foundation for management teams to take from the workshop for use in formulating their own specific plans.

A long range information system plan must be based, of course, on a careful assessment of information needs. Unfortunately, many managers fail to provide themselves with sufficient time and opportunity to think systematically about general information needs. Instead, they tend to focus their attention on solving specific managerial problems.

When managers do try to assess information needs, they are often unfamiliar with the range of possibilities that exists for formalizing their information systems, or with the costs and benefits of formalization. Farm managers in such a situation often find it difficult to identify and evaluate alternative strategies for improving their information systems.

Davis and Olson identify four general strategies for assessing information needs (pages 480-488). These are *asking*, *deriving* requirements from existing systems, *synthesizing* requirements from the characteristics of the processes being managed, and *discovering* requirements through experimentation.

The second and third of these strategies are emphasized in the *Information Management for Your Farm* workshops. As was noted earlier, asking farmers direct questions about their information needs is seldom useful, and discovering information needs through experimentation is generally too costly and time-consuming.

Carefully examining existing information system components within an organization, or in similar organizations, can often provide useful information on information system needs. A "deriving" strategy of this kind can be further supplemented by carefully investigating the features of information products and services

on the market. In these workshops, the fact that farmers meet in groups facilitates the transfer of information and ideas among them. *Information Management for Your Farm* workshops also offer opportunities to present an overview of the information system products and services available to farmers.

One problem with deriving information system requirements from existing systems, is that it focuses attention on the technical features of individual application subsystems rather than on their suitability for supporting management activities on a particular farm. "Synthesizing" strategies help focus attention on the business activities to be supported by the information system. They usually are based on structured investigations of business activities, followed by a mapping of organizational characteristics into desired information system characteristics.

Critical success factor analysis (see John Rockart's *Chief Executives Define Their Own Data Needs*) is used in these workshops to help farmers identify their information needs. This method is widely used to help general managers in large organizations identify their most important information needs. In *A Primer on Critical Success Factors*, Christine Bullen and Rockart define (on page 7) critical success factors as being:

... the limited number of areas in which satisfactory results will ensure successful competitive performance for the individual, department, or organization. Critical success factors are those few key areas where "things must go right" for the business to flourish and for the manager's goals to be attained.

To be useful, critical success factors need to be specific and truly critical to the success of the business. Information requirements can be synthesized from a set of such factors by asking what information is needed to determine whether performance in these key areas is satisfactory, and what information could

contribute to significant improvements in performance.

Critical success factors for crop production management in the hypothetical cash grain farm help illustrate their usefulness in defining information needs. Cost control for purchased inputs, timeliness of spring field operations, and machinery maintenance would be three typical critical success factors for crop production management. Evaluating these factors suggests several areas where information may have a significant impact on performance and several questions that, when answered, will help clarify information needs.

Regarding cost control, for example, the likely causes of costly mistakes need to be identified as the factors to be monitored most closely. Key control points also need to be identified. If significant adjustments can be made during the growing season to control cost, timeliness of information will be important. On the other hand, if the best time to prevent serious problems is before the growing season, timeliness may be much less important.

The complexity of the cost control problem also needs to be assessed. As the number of fields and crops produced increases, keeping track of factors affecting costs becomes more difficult, and timely production reports and action lists become more important. This would increase the potential value of a computerized field record system.

Finally, research on cognitive style and problem solving processes also influences the design of *Information Management for Your Farm* workshops. This body of research suggests that cognitive styles influence both perceptions of problems and approaches to problem solving. In turn, this can have a significant effect on individual information needs and on the design of information systems for meeting those needs. It also affects the division of responsibilities for information management.

A number of instruments have been devel-

oped for assessing cognitive style. One such instrument is the *Learning Style Inventory* developed by David Kolb. This evaluation tool characterizes an individual's learning and problem solving style by identifying strengths and weaknesses in four learning and problem solving activities:

- (1) concrete experience,
- (2) reflective observation,
- (3) abstract conceptualization, and
- (4) active experimentation.

This is information that can be used, in turn, to characterize how an individual uses information, models, and experiential knowledge in solving managerial problems. Managers

who rely on reflective observation and abstract conceptualization may be eager to adopt computerized record systems and decision support systems. Those who prefer to base managerial decisions on concrete experiences and active experimentation may not derive as much benefit from formalized information systems.

Information Management for Your Farm workshops build on the foundations presented in this chapter. The chapters that follow provide detailed guidelines and suggestions for leading a successful workshop. As you familiarize yourself with the workshop materials, remember that they were designed to facilitate the identification of information needs on the farm. The ultimate goal is to help farmers improve their information systems so they can manage more effectively.

CHAPTER THREE: BEFORE THE WORKSHOP

Any workshop requires careful planning to be successful. *Information Management for Your Farm* workshops are not exceptions. They may even require more preparation than other workshops you've presented. However, by following the ideas in this section you should be able to minimize preparation time while maximizing the impact of your workshops.

This chapter takes you through steps needed for preparing an *Information Management for Your Farm* workshop. These steps include identifying your audience, publicizing the workshop, registering participants, arranging facilities, and estimating the time required for the workshop.

3.1 – TARGET AUDIENCE

With its strong emphasis on group discussion and individual work sheets, an *Information Management for Your Farm* workshop is de-

signed to be a relevant and personal experience for participants. Using this delivery approach rules out the possibility of accommodating large groups of producers. Too little time is available for individuals to contribute to group discussions as the audience size gets large. On the other hand, if your audience is too small, there may not be a sufficient range of experiences and viewpoints needed to stimulate discussion.

An ideal audience includes management teams representing six to ten farms. Management teams might include husbands and wives, two or more partners, or parent and child combinations. Some of the work sheets used in the workshop are filled out individually and are designed to help identify similarities and differences within the management team. Others are filled out together by all the team members present. These help build a consensus about strategies for improving information management. Team-building benefits may be

lost when a farm has only one representative at a workshop.

Information Management for Your Farm workshops are most valuable for management teams that are considering changes in their operation. That change may be an expansion in the size of the primary enterprise, the addition of a new enterprise, the incorporation of new people in the management team, an intergenerational transfer, or the purchase of an on-farm computer.

If possible, the farms represented in a workshop should be similar in their mix of enterprises. Each workshop should be targeted for one or two farm types, even if the farms in the geographic area where a workshop is being given have a wide variety of production alternatives.

A workshop targeted exclusively, for example, at cash grain producers is easier to lead than one which includes producers of organic vegetables, tree fruits, nursery crops, and hogs. As the number of farm types increases, the differences in information needs and information strategies will also increase, and participants will find it more difficult to learn from each other.

On the other hand, diversity with respect to age, farm size, management experience and management style is important for a successful workshop. Young farmers will often be observed listening carefully to and asking questions of more experienced managers. Similarly, participants considering the purchase of a farm computer will pay especially close attention to the experiences and opinions of participants who are already successful using computers.

3.2 — PUBLICIZING YOUR WORKSHOP

If you do not work directly with farmers in the area where your workshop will be held, it will be almost essential to have a local site coordi-

nator. This could be a county or area extension agent, a farm management instructor, a lender, a computer vendor, etc.

One way to publicize your workshop is through advertisements or articles in a local newspaper or a popular trade publication. A direct mailing may, however, be more effective in reaching a specific target audience. Figure 3.1 shows a sample brochure that can be modified and used in direct mailings. Its content can also be the basis for a news release or a short newsletter announcement.

You could also choose to contact participants through personal invitations. You or your local coordinator may know of farms whose operators are likely to benefit from the learning opportunities offered by an *Information Management for Your Farm* workshop. If you do issue personal invitations, a brochure can be used with a follow-up letter to those who express an interest in attending your workshop.

3.3 — REGISTRATION FOR THE WORKSHOP

Information Management for Your Farm workshops are different from most workshops attended by farmers. This makes it important to prepare the audience for the structure and content of their workshop experience. Mandatory pre-registration for the workshop is suggested. This allows you or your site coordinator to mail a small packet of advance materials to participants prior to the workshop.

A pre-workshop mailing should begin with a letter that confirms their registration and gives additional details on plans for the workshop. A sample letter is shown in Figure 3.2. Accompanying the letter would be a work sheet participants can use to summarize their current farm and information system characteristics (Figure 3.3). Since this work sheet takes some time to fill out and may require review of farm record information, participants should be asked to complete it prior to the workshop.

Registration Form

Information Management for Your Farm

Cost: \$5 per person
(for lunch and breaks)

Make check payable to:
Yyyyyyy County Extension Service

Mail to: Yyyyyyy County Extension Service
1234 First Avenue
city state zip

Person(s) attending:
(please type or print)

Name

Address

City State Zip

Telephone

Name

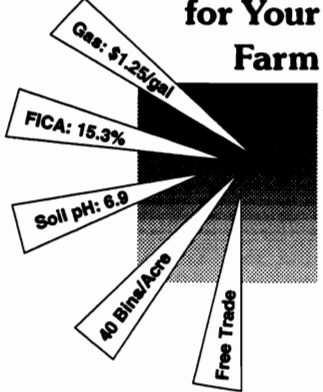
Address

City State Zip

Telephone

Amount Enclosed: \$ _____

Information Management for Your Farm



A workshop on strategies for improving your farm information system

Wednesday, November xx, 199X
Yyyyyyy County Extension Office
1234 First Avenue
city, STATE

Sponsored by the
ABCXYZ Extension Service
University of ABCXYZ

The University of ABCXYZ and the Agricultural Experiment Station, is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

- Do you find yourself overwhelmed with paperwork, facts and figures, but feel unsure of what direction your farm is headed?
- Do you sometimes fail to spot important problems or opportunities in time to do things about them?

Improving information management on your farm can help you control costs, increase profits, and use your time more effectively. This workshop is designed to help you develop a strategy for managing and using information more effectively.

This workshop is designed for farm couples. Through a series of written work sheets and group discussions, the instructors will help you identify critical information needs for your business, and develop strategies for meeting those needs. Potential uses for on-farm computers will be explored.

Registration

There is no fee for the workshop, but there is a charge of \$5 per person for lunch and breaks. Fill out the form on the back of this brochure and mail it with your check.

Preregistration is necessary for a meal count. Space is limited, so sign up early to be guaranteed a chance to participate. If you have any questions, call Xxxx Xxxxxx at 000/000-0000.

Workshop Agenda

9:30 Introductions and Workshop Overview

9:45 A Management Information Audit

- What are your family and business goals?
- What is your management style?
- What are your most important sources and uses of information?
- Answers to these questions are the starting point for developing a strategy to improve your information system.

10:45 Break

11:00 Critical Success Factors For Your Business

- Critical success factors are the few key things that must go well for your business to succeed.
- What are your critical success factors?
- What information do you need to monitor performance in those key areas?

12:15 Lunch

1:00 Strengths and Weaknesses of Your Farm's Information System

- How well are you meeting your management information needs?
- What's best (and worst) about your current information system?

1:30 What's Possible?

- What are the alternatives for managing information on your farm?
- Where can you go for the information you need to evaluate these alternatives?

2:15 Break

2:30 Setting Priorities For Improving Your Farm's Information System

- What are short- and long-term priorities for improving your farm's information system?

3:30 Wrap-up

Follow-up

Based on material from your written work sheets, the instructors will prepare a short set of comments and suggestions for improving information management on your farm.

The Yyyyyyy County Extension Service has FINPAC planning materials available to help with your farm planning.

Instructors

Xxxx Xxxxxx and Zzzz Zzzzzz, professors, Department of Agricultural and Applied Economics, University of ABCXYZ.

Figure 3.1 (Front and back of sample registration brochure)

This work sheet is discussed in greater detail in section 4.1 of Chapter 4.

An important question related to workshop registration is whether or not to charge a fee. Charging a small fee can be appropriate, to cover the cost of coffee breaks, lunch, and workshop materials. Alternatively, an outside sponsor can be sought to provide funds for some or all of these expenses.

3.4 – FACILITIES

Facility requirements for *Information Management for Your Farm* workshops are important but not extensive. Assuming that your audience represents up to ten farms, you should select a meeting room that will comfortably hold 15 to 22 people. Experience indicates that arranging tables and chairs in a circle or square helps stimulate discussion, since every-

University of XYZABC

Multi City Campus

Department of Agricultural and Applied Economics

1234 First Avenue city state zip

000/000-0000 Fax 000/000-0001

September 28, 199X

Dear Workshop Participant:

We look forward to meeting with you on Wednesday, November 13, for our workshop on "Information Management for Your Farm." The workshop is designed to help you develop a long term strategy for improving your farm's information system. By the end of the day you should have a clear idea of what information you need to manage your farm more effectively, and you will have identified some steps you can take toward meeting your information needs.

Background information on your farm and your current information system will help us work with you in analyzing your needs. To save time during the workshop, we ask that you complete the "Farm Information System Summary" form enclosed with this letter and bring it to the workshop.

As a follow-up to the workshop, we will be preparing a short set of written comments and suggestions for you. These will be based on information drawn from your "Farm and Information System Summary" and from written work sheets completed during the workshop. Therefore, we plan to collect your work sheets at the end of the workshop, and will return them to you with our comments.

Once again, we look forward to seeing you on November 13.

Xxxx Xxxxxxxx and Zzzz Zzzzzz
professors

Figure 3.2 (Sample letter confirming workshop registration)

Farm & Information System Summary

Please answer the questions below and bring the completed form with you to the workshop. This form will be used during the workshop as you analyze your farm's information system.

Farm Summary

1. How many acres of your farm are in each of the following categories?

Non-irrigated cropland	_____	acres
Irrigated cropland	_____	
Non-irrigated pasture	_____	
Irrigated pasture	_____	
Other	_____	
Total	_____	acres

2. a. What are your typical inventory levels of the following animals?

Breeding Animal Inventory

Dairy cows	_____	head
Beef cows	_____	
Hogs (farrowing)	_____	
Sheep (lambling)	_____	
Other:	_____	


b. How many of the following animals do you typically market each year?

Market Animal Sales

Beef calves	_____	head
Beef yearlings	_____	
Feeder pigs	_____	
Fat hogs	_____	
Feeder lambs	_____	
Fat lambs	_____	
Other:	_____	

3. Which of the following best describes your farm's major product(s)? (Mark only one.)

<input type="checkbox"/> Dairy <input type="checkbox"/> Cash crops <input type="checkbox"/> Mixed crops and livestock <input type="checkbox"/> Swine	<input type="checkbox"/> Beef <input type="checkbox"/> Poultry <input type="checkbox"/> Specialty crops <input type="checkbox"/> Other: _____
---	--



Information System Summary

4. Which of the following best describes your financial record system? (Mark all that apply.)

- Manual (or hand-kept) record system
- Computer-based record system: software used _____
- Both manual and computer-based
- Accounting or consulting service
- Community college or farm business management association

-Over-

Farm & Information System Summary (continued)

5. Which of the following best describes your crop record system? (Mark all that apply.)

- Notes on calendars
- Pocket notebook
- Field record book (hand-kept)
- Computerized crop records program: software used _____
- Crop consultant service
- Other: _____

6. Which of the following best describes your livestock record system? (Mark all that apply.)

- Notes on calendars
- Pocket notebook
- Livestock record book (hand-kept)
- Computerized livestock records program: software used _____
- Livestock record keeping service (e.g., D.H.I.A.)
- Other: _____

7. How many computers are used on your farm?

None One Two or more

8. Who is the primary computer operator on your farm?

- Don't have a computer on farm
- I am sex: _____ (M or F)
- My spouse sex: _____ (M or F)
- Other family member
- Hired employee
- Other: _____

9. Which of the following types of information are used on your farm? (Mark all that apply.)

- Daily newspaper (e.g., Wall Street Journal or a local newspaper)
- Farm publications
- Commodity newsletters or magazines
- Breed journals
- Electronic information services (e.g., DTN)
- Daily farm reports on radio or television
- USDA reports, market reports and analysis (e.g., Doane's, ProFarmer)
- Extension Service publications
- Other: _____

Figure 3.1 (Farm Information System Summary work sheet)

one can easily see everyone else. You will also want to establish a place in the front of the room as a focal point, and you will need both a flip-chart and an overhead projector.

A flip-chart is an invaluable tool for recording the thoughts and ideas discussed by the group. Use it to tally responses to work sheet exercises and to group responses by farm type, farm goals, or other classification variables. Use the overhead projector to present short summaries of the concepts covered in each work sheet and to illustrate how the work sheets should be completed. If a flip-chart is not available, the overhead projector can be used with blank transparency sheets to list and categorize work sheet responses.

3.5 – TIME REQUIREMENTS

An *Information Management for Your Farm* workshop will take about six hours to complete. As shown in the brochure in Figure 3.1, the workshop should be divided into morning and afternoon three-hour sessions. Each session should include a coffee or refreshment break at a convenient time.

A group lunch is an important part of the workshop design, since this gives participants a chance to discuss ideas and questions with each other, the instructor(s), and the site coordinator. The afternoon session begins immediately after lunch and its conclusion is always timed to enable participants to return to their homes in time for their evening chores or activities.

If circumstances make it difficult for you to schedule an entire day for a workshop, you can divide it into two three-hour evening sessions. These might be on consecutive evenings or one week apart. If you use this format, you might want to give participants a short "homework" assignment that will help them carry the workshop discussion home with them.

CHAPTER FOUR: PRESENTING THE WORKSHOP

Each *Information Management for Your Farm* workshop includes five major segments. Each segment is designed to build upon previous segments, leading ultimately to the development of a plan for improving the information systems of workshop participants.

The workshop begins with introductions and with a management profile of each farm. This segment includes discussion topics that encourage participants to join in the dialogue. In the second segment, participants identify and discuss critical success factors for their farms and associated information needs. In segment three, participants identify and describe strengths and weaknesses of their farm information systems.

The workshop facilitators present a short summary of "what's possible" in information systems in the fourth segment of the workshop. This helps the participants think about specific steps they can take to improve information management on their farms.

Participants identify short and long run information system objectives and strategies in the final segment, based on their specific information needs and their current strengths and weaknesses. The workshop then concludes with an evaluation.

This chapter discusses the presentation of each of these workshop segments. For each segment, we identify objectives, review presentation materials and work sheets, and make suggestions for encouraging discussion among participants.

4.1 – WORKSHOP INTRODUCTION AND MANAGEMENT PROFILE

Several tools are used at the beginning of the workshop to summarize each participants'

physical resources, managerial goals and management styles. The exercises and discussion during this segment of the workshop help the participants and facilitators get acquainted. They also yield a management profile for each farm that helps participants better understand their information needs. The management profile is also an essential resource for facilitators as they prepare follow-up comments for participants.

4.1.1 – WORKSHOP OBJECTIVES AND AGENDA

An *Information Management for Your Farm* workshop begins with introductions of the facilitators and the site coordinator, followed by a review of the workshop's objectives and agenda. In effect, this is a review of the information contained in the workshop brochure and in the letter sent to participants to confirm their registration.

The initial portion of your introduction might be something like this:

"Good morning! I'm [facilitator 1] and this is [facilitator 2]. We, along with [site coordinator], would like to welcome you to this workshop on *Information Management for Your Farm*.

"In recent years the complexity of managing a farm business has grown tremendously. Lower profit margins and increased market risks make cost control, the wise use of inputs, and effective marketing management more important than ever. Growth in the size of farm operations makes it more difficult to pay attention to details and make the timely decisions that are so important for success. Having more family members and/or hired workers involved in these larger businesses can also lead to communication problems.

Information Management for Your Farm

- **An effective, appropriate information system can improve farm performance**
- **Information needs are influenced by:**
 - **business and personal goals**
 - **management style**
 - **management skills**
 - **type of business**
- **Information needs vary across farms but managers can learn from each other**
- **Information needs are difficult to specify**
- **Changes in your information should be made in stages**

Figure 4.1.1

Workshop Objectives

- **Identify crucial information needs for your business**
- **Develop a long range plan for meeting your information needs**

Workshop Format

- **Work sheets and exercises**
- **Emphasis on discussion**
- **Follow-up**

Figure 4.1.2

"All these changes increase the need for effective information management. Fortunately, we've seen an explosion of new technologies that can help farmers manage information. But many managers aren't sure just how to incorporate new ways of managing information into their operations. That's the problem we want to address with this workshop."

Begin to work through the points in the overhead shown in Figure 4.1.1. This list gives the rationale for having a workshop on information management. It also introduces some of the assumptions underlying the design of this workshop.

Next use the overheads shown in Figures 4.1.2 and 4.1.3. They state the workshop objectives, explain the workshop format, and present an overview of the agenda. As you state the objectives, emphasize that the workshops are designed to help participants identify their own needs and develop a strategy for meeting those needs. As you explain the format for the workshop, stress the importance of group discussion and learning from each other.

Also explain the mechanics of using the work sheets. Participants can be given large envelopes to use for keeping their work sheets together. If the workshop's plans include providing follow-up letters, you can use the envelopes to collect work sheets and, after affixing an address label filled out by the participants, to send the work sheets back with the follow-up letter.

Finally, as you present the workshop agenda, be sure to indicate when there will be breaks for coffee and for lunch.

You can usually end this very brief workshop introduction with an opportunity for each facilitator to say a few words about his or her background, professional activities and interests. The site coordinator may also want to make a few brief comments about matters

such as the location of restrooms and accommodations for breaks and lunch.

4.1.2 – FARM SUMMARY

As noted in the previous chapter, a brief farm and information system summary form should have been mailed to participants prior to the workshop. This survey form was shown in Figure 3.1. It asked for information summarizing the number of acres of crop and pasture land farmed, livestock raised, and type of products produced by participants. It should also have summarized the financial and production record keeping systems in use, computer availability and operators, and information sources currently used on each farm.

One of the best ways to relax participants and increase their receptivity to the idea of talking to a group of strangers is by asking them to first speak about subjects they are very familiar with – themselves and their farm. Ask each participant to introduce themselves, and have one member of each management team present briefly report the results of their farm and information system summary.

You can typically ask the management teams to summarize their farm types, sizes and locations; to briefly describe their record keeping systems; and to discuss management responsibilities on their farms. You should have them do this extemporaneously, without reading the answer to each question off the summary form. An introductory statement might be as brief as, "My name is Wwww Wwww, and we operate a 200 cow dairy farm in the northern part of the valley. We use DHIA records and a hand accounting system. My husband manages the cows, and I keep the books."

4.1.3 – MANAGERIAL GOALS

The second component of the management profile is an elicitation of participants' farm goals. The purpose of this exercise is to establish the overall goals of the farm, without de-

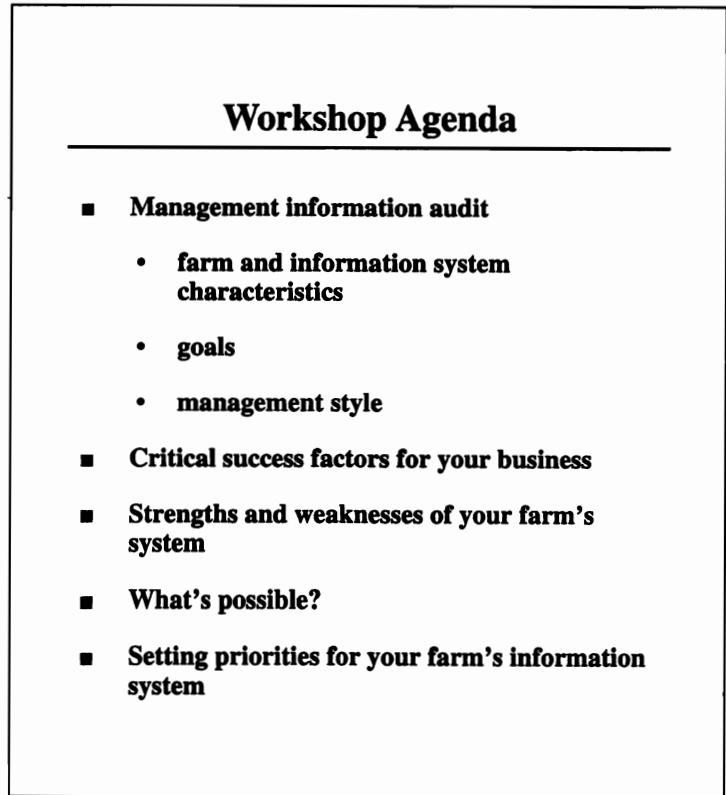


Figure 4.1.3

voting an entire day to the subject. You should discuss the importance of setting goals and the uses of goals.

In *Farm Business Management, The Decision-Making Process*, Emery Castle, Manning Becker, and Gene Nelson provide a good, brief overview of goals and the goal-setting process on pages 10–15. More elaboration on the topics discussed by these authors can be found in the publication *Setting Farm Family Goals*, by George Patrick and Brian Blake. You may also want to consider using part or all of Paul Gessaman's videotape/workbook materials, *Identifying Farm/Ranch and Family Goals*, during this part of the workshop.

Goals for the farm information system, which are defined by the participants later in the workshop, need to support objectives established for the farm business. The main thrust of the visual materials for this section, which are shown in Figures 4.1.4 through 4.1.6, is to reinforce the idea that goals are useful in

Goals for Your Farm Operation

- **If managers know where they are going and when they want to be there, then jobs are much easier.**
- **Goals and objectives for the information system should be based on goals and objectives for the farm business.**
- **Goals provide direction for the activities that we undertake and a target for which one is willing to work.**
- **Goals reflect our hopes and dreams for life but should be objective and realistic.**

Figure 4.1.4

- **Goals should:**
 - **require effort**
 - **include deadlines**
 - **be measurable**
 - **be flexible so they can be altered as conditions warrant**
- **Recognize that all goals will not be attained.**

Figure 4.1.5

defining a course of action and that goals must have certain specific characteristics if they are to be useful.

Goals can be short-term, intermediate, and long-term. They can also be competitive, independent, or complementary. As participants think about their goals, they should keep these characteristics in mind and should ask themselves questions like the following. Does working toward our short-run goals help achieve a longer-run goal? Can goals be made complementary rather than competitive? When goals are competitive, what trade-offs need to be evaluated?

After you've presented an overview of goals and their importance, participants should complete the goals work sheet illustrated in Figure 4.1.7. Because goals are difficult to verbalize, this work sheet lists twelve common farm and family goals from which to choose. Each participant is asked to independently pick four top goals, and to rank those four from most important to least important. They should also be encouraged to develop their own goals if they prefer.

After everyone has had time to select and rank goals, have the members of each management team compare their responses within their team. It is likely that in some teams all the members will have chosen very similar goals, while other teams will have members who identified different and perhaps conflicting goals. There is also a tendency for some management team members to stress family goals, while others select financial and production goals.

Next have each team informally identify and agree on their two most important goals and report them to the larger group. Using the overhead projector or flip-chart, you should compile a master list of all these priority goals reported by the teams.

You may find similarities in the priority goals identified by the teams. They may sort them-

selves out by farm type, or by the age of the management team, etc. For instance, many management teams in a group of diary farmers may stress production goals as being most important. Older management teams may emphasize transfer of ownership as their highest priority. Younger managers may tend to emphasize expansion and debt management.

The point of identifying goals in this workshop is that information systems should be designed to monitor those activities that contribute to goals. A computerized enterprise accounting system may be of limited value to a farm whose goals emphasize production levels and quality. Similarly, detailed production records without corresponding accounting information would be inadequate for farms that desire to maximize annual income.

You will probably find yourself referring to your master list of "most important" goals several times during the remainder of the workshop, so keep it handy. Posting the page or pages of the flip-chart used is an easy way to do this.

4.1.4 – MANAGEMENT STYLE

The final component of the management profile is an assessment of each participants' management style. This is accomplished using David Kolb's *Learning Styles Inventory* or a similar evaluation instrument. If you choose to use the exact materials used in developing this guide, you should become thoroughly acquainted with the conceptual foundations for the *Learning Styles Inventory* and associated materials prior to the workshop. You should be able to use the illustrative figures in this section directly. Sources for purchasing inventory work sheet packets and a user's guide are listed at the back of this volume.

Facilitators who choose to use an alternative learning styles evaluation instrument should be equally familiar with the instrument that is chosen. However, if you use such an alternate

- **Because goals may be competitive:**
 - **be sure that high priority goals are compatible with each other**
 - **be sure that goals of other management team members and family team members are considered**
 - **be sure that nonbusiness goals are not forgotten**
 - **be sure to consider how working at short-term goals can lead to achieving long-term goals**

Figure 4.1.6

Goals Work sheet

Management activities should be goal driven. Successful managers have well defined goals, and they develop effective strategies for meeting them.

Goals change as personal and business circumstances change. They also differ from one person to another. We ask you and your spouse to complete this goals work sheet.

Of the farm business goals listed below, identify four that are most important in your operation. Rank these four goals by assigning a "score" of 4 to the most important and 1 to the least important. You do not need to rank the goals that are not in your "top four."

There are no "right" or "wrong" answers. These are all worthwhile goals.

Name _____

Four most important (4)	Rank
<input type="checkbox"/> Increase the size of our most important enterprise.	_____
<input type="checkbox"/> Maximize our annual income.	_____
<input type="checkbox"/> Use environmentally sound farming practices.	_____
<input type="checkbox"/> Reduce intermediate- and long-term debt.	_____
<input type="checkbox"/> Produce the highest quality products for our customers.	_____
<input type="checkbox"/> Be recognized as a top farmer in the community.	_____
<input type="checkbox"/> Equal or exceed average production levels in the area.	_____
<input type="checkbox"/> Transfer ownership and control of our business to our children.	_____
<input type="checkbox"/> Have more time away from immediate responsibilities on the farm for leisure and family activities.	_____
<input type="checkbox"/> Reduce the physical effort and strain in our farming operation.	_____
<input type="checkbox"/> Sell farm assets and invest in other sectors of the economy.	_____
<input type="checkbox"/> Be recognized as a breeder of superior stock.	_____
<input type="checkbox"/> Help plan and use influence in guiding policies and activities in the community and the country for worthwhile purposes.	_____

—Over—




Figure 4.1.7 (Goals Work sheet)

Learning Style Inventory

- **The LSI helps you understand your strengths and weaknesses as a learner/manager**
 - capitalize on strengths
 - compensate for weaknesses
- **We will use the LSI in two ways:**
 - strengths and weaknesses in the learning cycle
 - learning/management style

Figure 4.1.8

tool, you will need to adjust the figures illustrating this section to match the evaluation tool you use.

Use the overhead shown in Figure 4.1.8 to introduce the *Learning Styles Inventory* to the workshop participants. Emphasize that management style can have important effects on the way people use information and that this is one way to assess management style.

Each participant should be asked to individually complete the *Learning Styles Inventory* instrument. It consists of a series of twelve incomplete sentences that describe how the respondent learns, allowing four possible endings for each sentence. Respondents complete the inventory instrument by ranking the concluding phrases for each sentence according to how well they describe their behavior. A respondent assigns a rank of "4" to the phrase that best describes his or her behavior, a rank of "3" to the next best descriptor of behavior, and so forth.

Management Style Work sheet

Your "management style" affects the way you work with people, your priorities for day-to-day activities, and your information needs. Having the one "best" management style is not important. On the other hand, *understanding* your management style is important.

The "Learning Style Inventory" can help you understand how you use information and solve problems. These are two important management activities.

Record the total of your scores from each of the four columns in the inventory.

Column 1

Column 2

Column 3

Column 4




Figure 4.1.9 (Management Style Work sheet)

Summarize the instructions found at the top of the *Learning Styles Inventory* work sheet, emphasizing that each response must receive a score. Also, assure participants that there are no right or wrong answers, and that no one will see their completed work sheet.

As participants complete the work sheets, assist them in determining their scores by adding up the totals of each column and recording their totals on the Management Style Work sheet (see Figure 4.1.9). After everyone has determined their column totals, help them plot their scores in the Cycle of Learning and the Learning-Style Grid provided with the *Learning Styles Inventory* instruments.

Begin the discussion of learning styles by using the overhead in Figure 4.1.10 to define the four stages in the learning cycle. If possible, show plots of inventory scores for the facilitators and the local organizer on a sample Cycle of Learning graph. This will demonstrate how all people have strengths and weaknesses in

the learning process and that there can be considerable differences among individuals.

Next, use the overhead in Figure 4.1.11 to introduce the four learning styles: diverger, assimilator, converger, and accomodator. The brief descriptions on this overhead can be augmented with points from supplementary information that may be available with the *Learning Style Inventory* work sheets. If possible, identify the learning styles of the facilitators and local contact person to demonstrate how there are differences among individuals.

As you review the description, strengths, and weaknesses of each type of learner, ask how many participants fit each one. After discussing the last type get feedback from the group on the appropriateness of their individual classifications. For instance, you can ask the group questions such as these: Does your learner type seem to fit you? Do you agree with the strengths and weaknesses associated with your learner type? How does your learning style compare with other members of your management team?

This discussion of learning styles provides another good opportunity for the group to warm up to one another by again talking about themselves. Most groups seem to find it especially interesting to discuss the implications of differences in management styles for approaches to problem solving and information use. Often two farm management team members will be quite different in terms of learning styles. This too can be beneficial, with each of them bringing a different set of strengths to the management team. Of course, they must recognize that this could be a source of conflict as well.

4.2 — CRITICAL SUCCESS FACTORS

The examination of farm business goals and management style in the opening segment of the workshop sets the stage for an analysis of critical success factors and their associated

- **Stages in the learning cycle**
 - **concrete experience**
 - **learn from feeling**
 - **relate to people**
 - **reflective observation**
 - **learn by watching**
 - **look for meaning**
 - **abstract conceptualization**
 - **learn by thinking**
 - **systematic planning**
 - **active experimentation**
 - **learn by doing**
 - **risk-taking**

Figure 4.1.10

- **Learning Styles**
 - **type one — diverger**
 - **imaginative thinker**
 - **understand people**
 - **absorb reality**
 - **type two — assimilator**
 - **develop theories**
 - **need for details**
 - **collect data . . . analyze facts**
 - **type three — converger**
 - **integrate theory and practice**
 - **value strategic thinking**
 - **experiment and tinker**
 - **type four — accommodator**
 - **learn by trial and error**
 - **excel when flexibility is needed**
 - **thrive on crisis**

Figure 4.1.11

Critical Success Factors

- **“Critical success factors” are the few key areas or activities where things must go well for your businesses to succeed.**
- **Identifying CSFs helps you focus attention on the things that matter most.**
- **Similar farms will have similar CSFs, but the list of CSFs can also be affected by special circumstances.**
 - **life cycle**
 - **unique problems or opportunities**

Figure 4.2.1

- **CSFs for a typical farm supply cooperative**
 - **accounts receivables**
 - **inventory management**
 - **off-season**
 - **planting season**
 - **scheduling custom applications**
 - **member relations**

Figure 4.2.2

information needs. As noted earlier, critical success factors are those few things that must go right if a business is to achieve its goals. In identifying these factors, the first challenge is to identify a meaningful, limited set of areas and activities that are truly critical.

When presented with a list of potential critical success factors, participants will often say they are all important. The primary objective of an analysis of such factors is, however, to focus attention on a more limited set of them. A challenge in this segment of the workshop is to help participants identify ways that better information can be instrumental in improving performance related to the critical success factors they each identify. For many, this will be the first time they have actually thought about concrete ways they can use information to manage more effectively.

Introduce the concept of critical success factors by first defining what they are, and by then presenting an example of possible critical success factors for a farm supply cooperative. The overheads for this introduction are Figures 4.2.1 and 4.2.2. These figures use a non-farm example to illustrate this concept because a farm example might influence the list of critical success factors that the participants would then identify.

The third point on Figure 4.2.1 is an important one that should be emphasized. Similar farm businesses will often have similar critical success factors. This is part of what makes a group discussion of critical success factors valuable. At the same time, special circumstances can influence the list of such factors for any given farm. This means that management teams of two farms with similar enterprises may list quite different critical success factors.

The work sheets in Figures 4.2.3 and 4.2.4 are used in this segment of the workshop. After introducing the concept of critical success factors, ask participants to work within their teams to identify up to five factors for

their farms, and to list them on the Critical Success Factors work sheet shown in Figure 4.2.3. This work sheet divides critical success factors into three broad categories: farm structure and financial management, crop production, and livestock production. These categories make it easier for participants to work through long lists of potential critical success factors. Be sure to point out that participants can select critical success factors fitting within one, two, or all three categories.

Once participants have completed these work sheets, use an overhead of the work sheet to tally the critical success factors selected by the group. Whenever possible, point out linkages between goals and success factors. For example, participants from farm operations that are in a growth phase often identify "cash flow management" and "manage debt levels" as critical factors, while participants from farms that are not undergoing any major transition often emphasize production in their critical factor lists.

Use the overheads in Figures 4.2.5 and 4.2.6 to introduce the next task in this segment of the workshop: identifying information needs associated with the critical success factors. The first overhead defines the task, and points out that it is often difficult. The second overhead is an illustration identifying possible information needs associated with one of the factors listed for a stereotypical farm supply cooperative.


Next, have the participants identify information needs for their own critical success factors on the Information Needs for Critical Success Factors work sheet (see Figure 4.2.4). Again, all participants from the same operation should continue to work together as a management team for this exercise. Initial discussion of this work sheet should center around information needs for the most frequently identified critical factors. Use an overhead of the Information Needs for Critical Success Factors work sheet to write down information items identified by participants.

Critical Success Factors

"Critical success factors" are the few key areas or activities where things must go well for your business to succeed. Identifying your critical success factors is useful in analyzing your information needs because these are the things you should be monitoring on a regular basis.

During this part of the workshop, carefully identify critical success factors for your business. After we discuss these as a group, we will identify types of information that can help you keep track of performance in these key areas.

On the list below, circle the five most important critical success factors for your business. We have grouped these into three general categories: farm structure and financial management, crop production, and livestock production. You can distribute your critical success factors among these categories any way you wish.




Farm Structure and Financial Management		
Cash flow management Adequate labor supply Increase farm size Reduce farm size Other: _____	Government program participation Maintain high production level Maintain high product quality Determine proper roles for family members Other: _____	Marketing and promotion Manage debt levels Improve farm buildings Risk management
Crop Production		
Crop production planning Timely field operations Pest management Hired labor management Post-harvest handling Other: _____	Post-harvest storage Soil fertility management Irrigation management Variety selection Timing of sales Other: _____	Market selection Irrigation scheduling Machinery maintenance Purchased input cost control Price risk management
Livestock Production		
Livestock production planning Disease control Culling Heat detection Sire selection Price risk management Other: _____	Replacement stock selection Feed cost control Ration balancing Timing of sales Market selection Building maintenance Other: _____	Equipment maintenance Hired labor management Care of young animals Maintaining pasture quality Manure disposal

Figure 4.2.3 (Critical Success Factors work sheet)

Information Needs for Critical Success Factors

An effective information system should provide the information you need to monitor performance related to your critical success factors. For your five most important critical success factors, identify types of information that would help you keep track of how you are doing and plan for the future.



Critical Success Factor	Information Needs
1. _____	1. _____ _____ _____ _____ _____
2. _____	2. _____ _____ _____ _____ _____
3. _____	3. _____ _____ _____ _____ _____

—Over—

Figure 4.2.4 (Information Needs work sheet)

From CSFs to Information Needs

- **What information do you need to monitor and improve performance in critical areas?**
- **Identifying information needs is not always simple.**
 - **understand business activities**
 - **understand manual and computerized information systems**
 - **learn from what others have done**

Figure 4.2.5

- **Farm supply cooperatives information needs for accounts receivables**
 - **customer account balances**
 - **customer credit limits**
 - **age of unpaid balances**
 - **mailing lists for billing and follow-up letters**

Figure 4.2.6

As noted earlier, identifying information needs is a difficult task. Often participants will identify things they must do to succeed rather than focusing on their specific information needs. For example, a participant who has identified irrigation management as a critical success factor might identify "timing of irrigations" as an information need. In this case, it would be useful to follow up with questions about what information is needed to determine when to irrigate.

4.3 – STRENGTHS AND WEAKNESSES

After the participants have identified their critical success factors and their corresponding information needs, they can examine their current information system and explore potential improvements they could seek to implement. In this section of the workshop you will provide a definition of an information system, illustrate the typical components of a farm information system, ask participants to complete a work sheet listing their information system strengths and weaknesses, and lead a group discussion of their conclusions.

An earlier chapter discussed and defined a farm information system in very broad terms. The discussion noted that such an information system includes the collection of manual and/or computerized records, planning tools, procedures, outside services, and technologies used in a farm business to gather, organize, store, and process information.

Every farm information system is unique, although farms with similar enterprise mixes may have similar information system components. Defining the "best" information system for any farm depends on the farm managers' goals and management style, the farm's enterprise mix, and the information needs identified in the critical success factor work sheet.

Farm information systems may be characterized by their physical components, by their information sources and by their human

capital. Physical components of farm information systems include such things as office space and furniture, files and computers. Information sources can be external (magazines, newsletters, market reports, soil tests, scale tickets, etc.), or internal (monitoring devices, time cards, field records, subjective evaluations, etc.). Human capital can be the work of outside consultants, friends and neighbors, as well as the efforts of those individuals working on the farm operation who record, manage, and interpret information.

Use the overheads in Figures 4.3.1 and 4.3.2 to introduce these ideas. Then ask participants to consider their own information system and complete the strengths and weaknesses work sheet shown in Figure 4.3.3. Workshop participants should be told to be as specific as possible in constructing their lists.

It is possible that some items may appear as both a strength and weakness on an individual's work sheet. For example, a processed vegetable and grass seed producer might list as a strength the fact that he had all of his records with him wherever he went. A corresponding weakness could be that it is difficult to quickly retrieve useful information from records because they are spread across the seat and dashboard of his pickup.

Allow the workshop's participants adequate time to carefully consider their information system. It is important that they do a good job with this work sheet. You will probably want to roam around the room and assist those having problems identifying their strengths and weaknesses.

A good way to stimulate their thinking about strengths is to ask participants what they are proud of. What parts of their information system would they like to show off to others unfamiliar with their farm? What records do they have that are of high value to the farm? To get them thinking about information system weaknesses, suggest they consider things that relate to frustrations or obstacles. What

The Concept of an Information System

An information system is a collection of manual and/or computerized records, planning tools, procedures, outside services, and technologies used in a farm business to gather, organize, store, and process information.

- **Every farm has an information system . . . some are more formal than others.**
- **The "best" information system for a farm depends on:**
 - **managers' goals**
 - **management style**
 - **management skills**
 - **enterprise mix**
 - **critical success factors**

Figure 4.3.1

Farm information systems can be characterized by:

- **Physical components**
 - **farm office**
 - **files and written records**
 - **computer**
- **Information sources**
 - **internal**
 - **external**
- **People**
 - **management team**
 - **non-management employees**
 - **outside consultants**
 - **friends/neighbors**

Figure 4.3.2

Strengths and Weaknesses of Your Information System

Your information system is more than just financial and production records. It also includes tools and methods you use for planning and budgeting, as well as consultants and external sources of information about markets, weather, technology and government policy. Broadly speaking, your farm office and your record-keeping routines are also a part of your information system.

Before developing a long-term plan for improving your information system, it's important to assess the strengths and weaknesses of your current system. Your plan should build on your strengths and help you overcome your weaknesses. In the left-hand column, list the most important strengths of your current information system. In the right-hand column, list the most important weaknesses.

Information System Strengths	Information System Weaknesses




Figure 4.3.3 (Strengths and Weaknesses work sheet)

information can they never seem to keep track or make sense of? What information management tasks never get done because of a lack of time or motivation?

Wrap up the review of strengths and weaknesses by asking the members of each management team to discuss one strength and one weakness they identified. Make an abbreviated list on the overhead or flip-chart as participants from each farm present their ideas. As you build the list, look for common trends or themes, especially in weaknesses.

Identifying one or more collective weaknesses can provide you with good examples to use through the remainder of the workshop. For example, in a workshop for diversified crop producers, a common critical success factor could be timeliness of cultural operations. Machinery management might be recognized as the key to performing operations in a timely manner, and a weakness identified by several participants might be a lack

of machinery records. You could build on this common weakness through the course of the workshop by discussing possibilities for collecting and managing machinery information and the associated potential benefits and costs of these activities.

4.4 – WHAT'S POSSIBLE?

The next segment of the workshop is a discussion of possibilities for managing information on the farm. The nature of this discussion depends to a large extent on the workshop's participants. If most participants are using manual record systems, you will probably want to discuss both manual and computerized options for managing data. If the majority of participants are using computers, then the discussion can focus on new computerized applications and methods for managing data on the farm.

If the participants are somewhat evenly distributed over a range of record systems, those that are using computerized systems may even be used as resource people discussing their experiences for the benefit of the rest of the group. Participants with excellent manual systems can also share the methods they've devised for managing information. Be flexible, and try to involve the audience as much as possible without getting bogged down on technical issues and details.

This section provides an overview of information management alternatives. It is intended as a short primer for those with limited backgrounds in conducting educational workshops on management information systems. Facilitators with extensive experience may want to substitute their own material for what is presented here, or use their material to augment this discussion.

This section concludes with a guide to some resources which can be used after the workshop as participants implement their plans for improving their farm's information system. The

resource list should be modified to reflect those resources that are available locally.

This section contains enough material for several 45-minute sessions. Use the material presented here, along with your knowledge and experience, to prepare a presentation appropriate for your workshop participants.

4.4.1 — BASIC ALTERNATIVES FOR INFORMATION MANAGEMENT

There are three basic alternatives for doing most information management tasks on a farm, and these are summarized in the overhead shown in figure 4.4.1. Farm managers can use an on-farm manual system, an on-farm computerized system, or a service provided by an off-farm consultant or service bureau. The advantages and disadvantages of each of these alternatives are discussed in this section.

Before beginning the discussion, note that the effectiveness of an information system does not depend critically on which alternative is chosen. This point is emphasized in figure 4.4.1. Effectiveness of an information system depends on an understanding of what information is needed, on discipline in collecting data, on thoughtful review of summary reports, on skillful planning, and on monitoring progress toward the implementation of plans.

It is important to note that computerizing one part of an information system does not require computerization of everything. Often farmers achieve favorable results by starting with one fairly simple step toward computerization, making further changes only as needed. Some information management tasks will always be best done by hand.

On-Farm Manual Systems

Many record keeping, planning, and analysis tasks are most easily done by hand. Over the years, efficient manual systems have been designed for keeping farm production, market-

ing, and financial records. In general, they are inexpensive and easy to use. The best manual systems are well organized, so that needed information can be retrieved quickly. They often include data collection forms that can be carried to the field or barn so data can be recorded during work activities.

Of course, manual systems also have disadvantages. The most serious may be that summarizing records can be time consuming and prone to errors. Important problems or opportunities may be missed as a manager focuses on the details of individual production events or financial transactions rather than on broader business patterns. Developing production plans and budgets can also be so time consuming and tedious when done by hand. As a result, planning may not be done as carefully as it should. Record system summaries, production plans, and budgets are also often the basis for reports to lenders or government agencies. With a manual system, preparing

What's Possible?

- **There are three basic ways to do most information system activities**
 - **on-farm manual**
 - **off-farm service**
 - **on-farm computerized**
- **Success does not depend on the basic approach you choose. It does depend on:**
 - **your understanding of why you need information**
 - **your office procedures and discipline**

Figure 4.4.1

accurate, attractively formatted reports may be time consuming and difficult.

At this point in the workshop, you may want to ask participants to share something good and/or bad about the manual components of their information systems. Note any similarities which occur across the various farms represented.

Service Bureau Systems

A wide range of record keeping and information processing services are offered by banks, accountants, veterinarians, crop and livestock production consultants, community colleges, and market advisory services. These services may be provided on a fee-for-service basis, or they may be offered as part of some other service. In general, the providers of these services use computers to speed data entry, processing, and reporting.

Because they have many clients, service bureaus are often able to use their computer equipment on a full-time basis and can hire specialized workers to enter data and process reports. As a result, they are often able to offer a high level of service at a reasonable cost. Many service bureau systems also provide expert analysis, advice, and comparative information along with their information processing services.

On the negative side, managers who use service bureau systems often fail to develop the knowledge of the details of their operation that would otherwise come with maintaining their own records of individual transactions or production events. As a result, even well-designed, accurate summary reports may not be as meaningful. Managers who use service bureaus may also lose the flexibility and immediacy of being able to look at their records in response to an unexpected problem, or to use their records in developing figures needed for production planning or budgeting.

It could be valuable to have participants who

use service bureaus briefly discuss their experiences and plans for the future of their service bureau use. Do they expect to continue with the service, or do they anticipate change? If changes are expected, what will they probably be, and who will be responsible for subsequent information management?

Computerized On-Farm Systems

Since the introduction of personal computers in the late 1970s, the cost of on-farm computer systems has fallen steadily while the power of those systems has increased dramatically. A complete, relatively powerful computer system, including a printer and operating system software, can be purchased for less than \$2,000. Affordable software packages are also available to support most farm management activities.

The best software packages are designed to make data entry as easy as possible. They make data available for retrieval as needed for reviewing recent activities or for developing plans for the future, and they generate reports that are accurate, informative, and easily read. Computerized tools for planning and analysis give managers access to the problem solving skills of the experts who designed them, often at a cost well below the charge for a single on-farm visit by a consultant. Also, telephone linkages between on-farm computer systems and remote databases give managers access to timely information on market conditions, weather forecasts, and production recommendations.

These are significant advantages, but they come at a cost. First, when costs of ownership and training and the value of time spent entering data and generating reports are taken into account, computerized on-farm systems are usually more expensive than manual or service bureau systems. Second, computerized systems are subject to breakdowns and equipment failures that can delay access to data or can even result in the loss of data. Finally, data entered and stored by one software package

may not be accessible by another. Therefore, it may be necessary to print out detailed data and re-enter it when it will be used for a purpose outside the range of functions supported by a single package.

You should involve participants in discussion again by asking those with computers to share their experiences. What benefits have they received? What unexpected costs did they encounter? How long did it take them to learn to use the program or the equipment? Would they make the decision to computerize again, knowing what they now know?

Farm managers using manual systems are often keenly interested in what their computerized neighbors are doing, so expect some good dialogue at this point. Questions about what a computer can be used for on the farm will likely arise from this discussion, providing a transition to the next topic.

4.4.2 – MANAGEMENT SUPPORT FROM AN INFORMATION SYSTEM

An information system should be a tool that leads to more effective management. Therefore, the design of an information system should be based on an understanding of the management activities that are most important in an operation. This section presents a broad overview of the kinds of support a well designed farm information system can provide for production, marketing, and financial management. Not all these elements will be important in every operation, and some activities key to a specific farm may not be identified, but this overview should help identify the kinds of management support farm information systems can provide. The overhead shown in Figure 4.4.2 headlines these topics.

Production Management

An effective farm information system can support crop and livestock production management in a variety of ways. These range from

basic record keeping for internal use or for reporting to regulatory agencies, to production planning, work scheduling, and problem identification.

Crop production records (which may be maintained on paper, kept by a consultant, or entered and stored in an on-farm computerized system) usually include data on inputs used and crop yields on a field-by-field basis. They may also include field maps, soil test results, weather records, machinery use and maintenance records, and scouting information on insect, weed, and crop disease problems. Some producers also keep detailed diaries of field work that include information on the dates and time required for field operations.

Livestock production records can also be maintained manually, by a consultant or veterinarian, or with an on-farm computerized system. For livestock enterprises based on breeding stock – such as dairy, cow-calf, and feeder

Management Support

- **An information system should lead to better decisions and more effective management.**
- **Information systems can support**
 - **production management**
 - **marketing management**
 - **financial management**

Figure 4.4.2

pig operations — records are usually maintained for each cow or sow. The records may include data on the production of young animals and milk, health and reproductive problems, and feed consumption. Often these systems focus on key “events” such as heat detection, breeding, pregnancy check, birth of young animals, weaning, and culling.

For livestock enterprises such as beef feedlots, hog finishing, and poultry production, records are usually maintained for groups of animals. These records generally include data on performance indicators such as weight gain, feed consumption, and death losses.

Production records are of value only if they are used to support management decisions. For most farmers, crop and livestock records are the primary source of information needed to analyze past performance, to develop production plans, and to monitor their implementation. A wide range of manual and computer based tools are available to support planning and analysis in specific crop and livestock enterprises.

A farm's production record keeping system may be as simple as a machinery maintenance card file, a wall chart indicating planned breeding and calving dates for a dairy herd, or a computer-generated “to-do” list for a feeder pig operation. The production record system may also be as complex as a dairy herd breeding wheel, a computer model for evaluating pest management decisions, or a project management package that projects and tracks flows of resources through a growing season. In each case, however, the quality of the support these tools provide depends critically on the completeness and accuracy of the production records used with them.

A final point to make is that the value of farm production records is often enhanced when they are supplemented by external information. These can be evaluations of alternative production practices, recommendations on how to respond to crop pest or herd health

problems, variety trial results, sire performance records, etc. External information may be essential for evaluating production alternatives you have never tried. It may also be the basis for performance comparisons that can help identify strengths and weaknesses in individual operations.

Marketing Management

Many cash grain and market livestock producers use forward contracts, futures contracts, and/or options to manage the price risk they face. Farms that place importance on marketing management are likely to have information systems which include systematic methods for monitoring current prices and market news and for maintaining historical price records.

Current market conditions can be monitored through radio broadcasts, price quotes published in newspapers, phone calls to a local elevator or commodity broker, or an on-line market news service. All provide easy access to information on price levels and news stories that may have an impact on price trends.

Methods for maintaining historical price records include files of cash and futures price quotes clipped from a newspaper, hand written records, price charts, newsletters from marketing advisory services, and computerized databases. Historical price records can be useful for recognizing recurring patterns in price movements or for spotting current price trends. This is one reason why price charts — whether drawn by hand, published in a newsletter or newspaper, or generated by charting software packages using an on-farm computer — are so widely used for marketing management.

Many farmers find it useful to supplement historical price records with records of past marketing transactions. Again, these records can be maintained by hand or in electronic form. Such records are needed to keep track of current inventories, forward contract

commitments, and futures and options positions. They are also useful for identifying typical seasonal patterns for marketing decisions.

The value of historical price and market transaction records is enhanced if they are used as data in evaluations of alternative marketing strategies. For example, several years of historical price records can be used in a "what if" analysis of strategies that call for different patterns of sales over the marketing year. Results for these new strategies can then be compared to actual results based on market transaction records. Such an analysis can be done by hand for only a few simple alternatives or by computer for a larger number of more complex marketing strategies.

Financial Management

The ultimate success or failure of a farm business is often measured in financial terms. All farm businesses are required by law to maintain the financial records needed for income tax reporting. Farm businesses that borrow money are also required by their lenders to maintain records needed to assess their liquidity, profitability, and solvency. But even in the absence of these outside reporting requirements, financial records and financial plans are important tools for the management of farm businesses.

Financial record systems organize, store, and summarize data on financial transactions. A financial record system may be as simple as a set of file folders or envelopes for bills and receipts. It may also be a manual farm account book, a computerized service provided by an accountant or lender, an inexpensive computerized check register maintained with an on-farm computer, or a full featured computerized farm or business accounting package. Though there are important differences among these types of financial record systems, they share a number of characteristics because accounting practices have been highly standardized since before the invention of computers. Once again, how you use a

record system is more important than which type of system you choose.

Financial record systems are primarily *backward looking*. They summarize information on past transactions in order to describe the current financial position and past financial performance. As such, the value of these systems depends largely on how well the statements they generate help track a farm's financial progress.

Good financial management also needs to be *forward looking*. An information system should also include tools that help develop budgets for the short, intermediate, and long term. Projections of cash flows can help in managing cash reserves and credit more effectively, and longer term budgets can help in evaluating the profitability of alternative investments. Once decisions are made, comparisons between budgeted and actual performance can help monitor the implementation of plans.

Finally, the financial management component of your information system may provide useful support for activities such as payroll processing and monitoring accounts payable and receivable. Computerized systems are especially useful for functions such as these, since they can be quite effective in automating time consuming tasks.

Discuss the pros and cons of the methods used by workshop participants to maintain information for production, marketing, and financial management decisions. Are they pleased with the information they have available for making these decisions? Is there data which they wish they had, but are currently not collecting? How well do their current systems relate to their critical success factors? This may be a good opportunity to once again have participants focus on information needs in relation to their critical success factors. Questions or comments about computer systems provide good lead-ins to the next portion of the What's Possible segment.

4.4.3 — HARDWARE AND SOFTWARE FOR COMPUTERIZED INFORMATION SYSTEMS

Many farmers are considering the purchase of a new computer, or perhaps upgrading a current system. Effective use of computers for information management requires that farmers know something about computer hardware, general and specific purpose software, and the process of establishing computer-based information system components. Each of these items is briefly discussed in this section and summarized in the overhead shown in figure 4.4.3. Facilitators may also want to supplement this material with their own or with locally developed materials that discuss computer hardware components, terminology and software for farm applications.

Computer Hardware

Hardware is the term used to describe all the physical components of a computer system.

A typical computer system includes four basic hardware components. The *CPU* (the central processing unit) is contained in the box-like chassis of the system, which also houses disk drives, memory chips, and interface devices. Information is entered into the computer via the *keyboard* (or in some cases from removable disks or via telecommunication links). The computer displays input and output through a *monitor*, a device which is similar in appearance to a television. Finally, computer output is recorded on paper using a *printer*. The costs of these hardware components varies depending on their capabilities and technological advances in the computer industry.

As shown in the upper part of the overhead in Figure 4.4.4, computer hardware is available from three primary sources: local dealers, mail-order companies, and other mass distribution outlets. Local dealers typically sell a limited number of computer brands, but provide a substantial amount of service and assistance. While this may result in higher initial purchase costs, it might possibly lower costs over time when support, repair, and maintenance expenses are incurred.

Mail-order companies either market their own brand of computers, or handle a wide range of computer makes. They compete on price and features, and normally rely on contracts with third parties to perform repair and maintenance services. They can often tailor a system to exactly fit anticipated needs. Mass distribution outlets, such as retail chain stores or computer warehouse-type stores, also offer low-priced computer alternatives. Their approach is often to only stock a limited number of pre-determined computer set-ups that are priced to maximize their sales volume.

Purchasing computer hardware from a local dealer is often recommended for someone new to using computers. Competent dealers can help determine hardware needs and provide systems which will perform the functions required. A local dealer also may offer assistance in setting up the system as well as train-

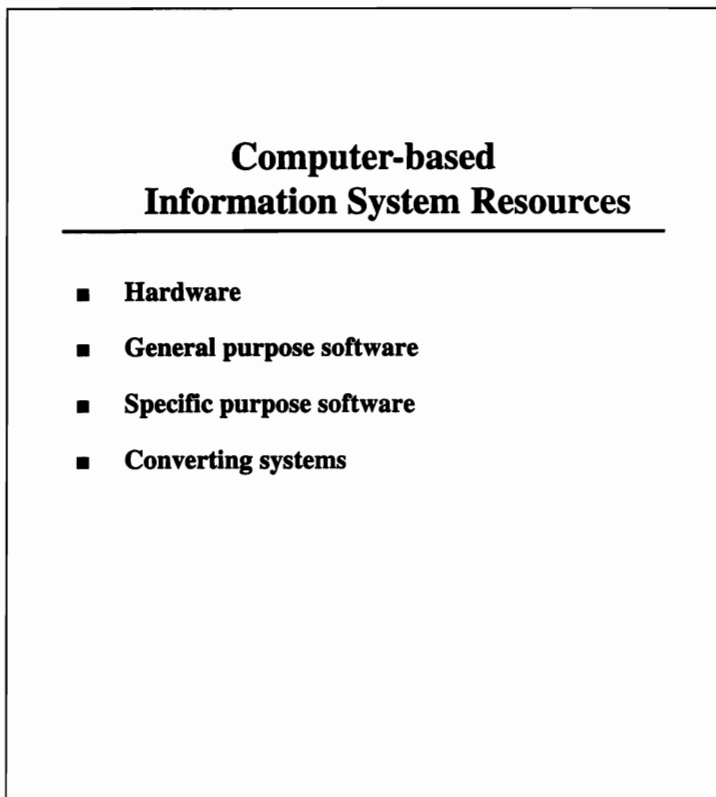


Figure 4.4.3

ing sessions covering computer basics. Of course, these services are paid for in the form of slightly higher prices in comparison to other computer sources.

For experienced computer users, mail-order or mass-market suppliers are often better sources for hardware. Mail-order companies build custom systems to individual customer specifications at very competitive prices. Mass-market outlets typically stock configurations appropriate for many farms, and are also quite price competitive. Some of the more specialized mass-market computer vendors also provide customizing services. Neither of these sources will usually offer the same levels of service expected from local dealers.

No matter where a computer is purchased, there are four main issues to consider prior to the purchase decision. These are listed in the lower part of Figure 4.4.4.

Support and service has been mentioned. The importance of this issue depends on the skills and interests of the end users. For someone who wants a packaged system for their farm, ready to run right out of the box, higher levels of support and service will be required. On the other hand, some individuals are able and willing to spend time learning their hardware and software system's capabilities, and enjoy making their system do what they want. These individuals may require more technical advice and less introductory support.

Compatibility is an important issue to consider for both hardware and software. There are several different types of personal and business computers available, and they will not necessarily always work together. Farms which already have one or more computers may be critically concerned with the ability to share data among their current and future computers. This will not be a problem for those new to the use of computers. The time to determine whether one computer is compatible with another computer is before large investments are made.

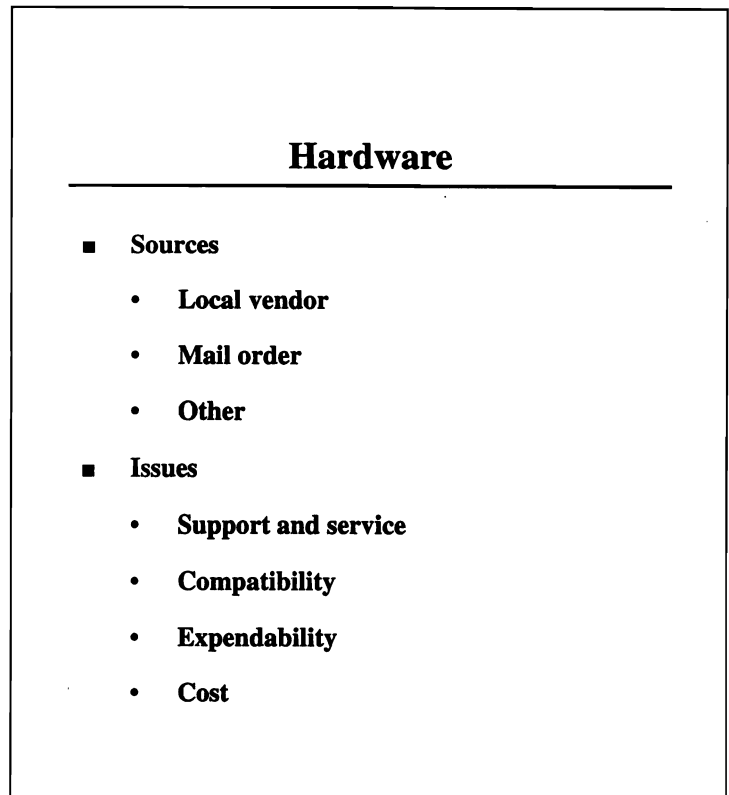


Figure 4.4.4

New computer users may have little need to share data within their operation. They would be less concerned with compatibility initially, however they may desire to share information electronically with other people who already have computer systems. Therefore, compatibility with that existing equipment may sometimes need to be considered.

Sales representatives from the various hardware sources can usually provide information about compatibility, but such advice should not be depended on to be 100 percent reliable. The best approach is to actually test the ability of any computer you are considering to work together with whatever other computers you use. Actually test the ability of the computers to share a data sample. Also test the ability to connect or network those computers together where that is desired. It is also very important to be certain that any software you plan to use will run properly on the type of computer you are considering.

Software

- **Software is a set of instructions which tell hardware how to store, process, and report information.**
- **Three types of software**
 - **operating system software**
 - **general purpose software**
 - **specific purpose software**

Figure 4.4.5

General Purpose Software

- **Examples**
 - **spreadsheets**
 - **word processors**
- **Sources**
 - **Software discount houses**
 - **Local vendors**
 - **Mail order**

Figure 4.4.6

Almost everyone eventually outgrows a computer system. This leads to the need for expansion or replacement. Before buying a new system, determine the cost of adding components (such as a modem or new monitor) or upgrading components (such as a new processor or additional memory). Also consider how much of a performance improvement the upgrade will provide compared to the capabilities of a totally new system. Again, sales representatives can provide this information.

Though initial purchase price is an important issue when buying a system, that initial cost may be small relative to the costs of software and of the time devoted to learning and using the system and software. The lowest purchase price may not always result in the most effective computer solution. A more expensive system that offers more support, service, compatibility, and/or expansion may be the better alternative.

Computer Software

Software is the set of instructions which tells computer hardware what to do and how to do it (Figure 4.4.5). Without suitable software, even the most powerful hardware is virtually useless. Begin exploring computerized solutions for information system needs by examining the variety of software packages available, then investigate hardware which is compatible with the chosen software.

Three general types of software are available, and all of them are commonly used on farms. The first type is operating system and graphical interface software. This includes DOS and Windows®, the Macintosh® operating system, the various versions of UNIX, etc. Basically, this type of software tells the computer how to manage files (collections of related information), use memory, access storage devices and other components, and display information.

All microcomputers use some type of an operating system, and some are able to use more than one type (though not at the same time).

Many are sold with an operating system already installed, and you can sometimes specify which you want. Selection of a computer does sometimes dictate which operating system you will have to use, and the operating system to some degree dictates compatibility with other computers. When two computers use the same operating system, it becomes more likely that data can be exchanged between them with fewer complications.

The second basic type of software is referred to as general purpose software. Examples and sources of general purpose software are shown in Figure 4.4.6. These are designed to perform some general task, and are not specific to the agricultural industry, or to any other industry for that matter. Electronic spreadsheets, word processors, and database managers are examples of general purpose software.

Many general purpose software applications are routinely used on farms. They are available from a variety of sources, including software discount houses, local vendors, and mail order computer and office supplies companies.

The third type of software is considered to be "specific purpose" software (see Figure 4.4.7). This is software written to address a specific need that is often relevant to only a single industry. Software programs specific to agriculture include farm accounting systems, crop and livestock record keeping systems, and livestock ration balancing systems.

Specific purpose software is typically written for a specific industry. Because this means there is usually a smaller market for this software relative to general purpose software, it tends to be priced significantly higher. Copies of specific purpose agricultural software may be available from local dealers, directly from software developers, or from universities.

Most farms use a number of different computer software programs. Software used in managing a cow/calf operation might include a basic general ledger for accounting, a spread-

Specific Purpose Software

- **Examples**
 - **farm accounting**
 - **crop record keeping**
- **Sources**
 - **Local vendors**
 - **Software developers**
 - **Universities**

Figure 4.4.7

sheet for budgeting, a livestock record keeping program for production records, a word processor for correspondence and report writing, and an operating system with utilities for managing the computer. The software used by any particular farm depends on the nature of the operation, the goals of its management team, and their current information system.

4.4.4 – CONVERTING TO A COMPUTERIZED SYSTEM

After obtaining the necessary hardware and software to computerize part or all of a farm information system, the next step is to begin implementing use of the new tool. Figure 4.4.8 summarizes advice for beginning this process.

First, don't fix what's not broken. Rather, focus computerization efforts on one or more areas that need improvement. For instance, a farmer who has a very complete set of crop field

Converting to a New System

- **Don't fix what's not broken**
- **Start small and build**
- **Maintain both systems**
- **GIGO**
- **Establish procedures**

Figure 4.4.8

records that always provides ready access to information needed for management decisions may realize few benefits from computerizing his or her crop records. Unless a computerized system adds new capabilities such as mapping or improved summarization, it will, at best, provide the same information as the manual system.

At worst, a new computerized system may be more cumbersome and time-consuming than a functioning manual system. On the other hand, a computer package that makes significant improvements in an already effective manual system can be the best first step toward computerization.

Effective information managers often start small and build. Many managers express a desire to computerize everything on the farm, but then find the job so overwhelming that nothing gets done. Start by choosing and computerizing one information need. For

example, a manager of a row-crop farm might decide that enterprise analysis by crop and field is a priority. That person might invest initially in a computerized enterprise accounting program to maintain accounting records. Once this is done and the manager has achieved some success in this area, subsequent needs can be tackled until some level of stability is attained.

Common sense suggests that as a manual system is converted to a computerized system, both should be maintained for a period until the computerized system is proven to generate accurate results. By maintaining parallel systems for a short time period, users gain a confidence in the computerized systems that will reinforce its use in other applications as needs grow.

Any computer program is only as good as the data entered into it. Computer scientists refer to this as the Garbage In - Garbage Out (GIGO) principle. Inaccurate input results in erroneous output from any computer. A computer does not eliminate the need to maintain and record data; it simply provides a faster, more convenient place to store and retrieve the data. Individuals who hate keeping records and dislike typing may not be pleased with computerized systems.

Finally, any aspect of an information system will be improved by establishing standard procedures about it. This is true for a computerized system, too. Schedules should be established for performing routine tasks, and these schedules should be adhered to. Examples of procedure schedules include entering accounting transactions each Friday afternoon, and posting them on the first day of each month. Establishing such procedures will form good management habits and maintain continuity in an information system.

Wrap up the *What's Possible* segment by distributing a guide to farm information system resources. Figure 4.4.9 shows some of the materials available. This list can be modified

to include local or regional resources. Participants can also be asked to contribute to this list, to build your resource library for future workshops.

4.5 – OBJECTIVES AND STRATEGIES

In this final *Information Management for Your Farm* workshop segment, participants will identify specific objectives for improving their information system. They will also begin to develop a strategies for working toward those objectives.

Through the earlier parts of the workshop, participants reviewed their personal and business goals and objectives, and learned about their own management styles. They worked with others from their farm operation to identify critical success factors for their business and specific types of information needed to do well in these critical areas. They assessed their current farm information system's strengths and weaknesses, and through the discussions and presentations they learned more about what their information system could be like.

Now is a time for members of the various participating management teams to reflect on all they have learned in the workshop and translate their new knowledge and insights into concrete action plans. But, because objectives and strategies for improving an information system typically address weaknesses or fundamental management problems, participants may not want to discuss these openly with the group. Therefore, this segment of the *Information Management for Your Farm* workshop is designed to accommodate privacy and does not include time for group discussion.

Begin this final segment with a brief recap of the workshop and with a restatement of its two major goals:

- Identifying crucial information needs for your business.

Additional Farm Information System Resources

- **Ag Executive**
Doane Information Services
11701 Borman Dr.
St. Louis, MO 63146
(314) 569-2700
- **ag/INNOVATOR**
Agricultural Information Management Network
7014 West Highway C-13
Linn Gove, IA 51033
(712) 296-3615
- **Association of Agricultural Computing Companies**
P.O. Box 122
Claytonville, IL 60926
(815) 457-2987
- **Farm Home Offices**
P.O. Box 840
Vinton, IA 52349
(319) 477-3276

Figure 4.4.9

- Developing a long-range plan for meeting those information needs.


Because the workshop will end with the participants filling out a final work sheet and an evaluation form, take time now to thank any individuals or groups who may have helped organize the workshop. Also thank the participants for their cooperation and willingness to share their ideas and experiences.

If you plan to write personal follow-up letters to the workshop participants, you will need to make arrangements for getting copies of their various work sheets. Because it may be awkward, inconvenient, or even impossible to make copies of work sheets while participants wait at the end of a workshop, each management team should have been given a large envelope and blank address label, as explained earlier in this chapter. If a participating farm management team wants to receive follow-up material, have them print their

Objectives and Strategies for Your Information System

A plan of action to improve your information system should be based on long-term objectives that reflect your most important information needs and the current strengths and weaknesses of your information system.

In the left-hand column, list up to three specific objectives you have for improving your information system over the next three years. In the right-hand column, identify things you plan to do to meet these objectives



Information System Objectives	Information System "To Do" List
Objective 1: _____	"To Do" List for Next Week
_____	_____
_____	_____
_____	_____
_____	"To Do" List for the Next Three Months
_____	_____
_____	_____
_____	_____
_____	"To Do" List for the Next Year
_____	_____
_____	_____
_____	_____

-Over-

Figure 4.5.1 (Objectives and Strategies work sheet)

address on the label and place it in the envelope along with their completed work sheets.

As you distribute the "Objectives and Strategies for Your Information System" work sheet, which is shown in Figure 4.5.1, review the instructions. These direct participants to identify up to three specific information system objectives and to list steps they will need to take to meet these objectives.


Participants fill out this final work sheet at their own pace. As groups work, you should circulate around the room to answer the specific questions that will usually be asked by one or more of the participants. This can also be an opportunity to give individual groups personal responses to issues and questions that may have come up during the workshop.

If you will be providing follow-up letters, this time at the end of the *Information Management for Your Farm* workshop is a good opportunity for making a transition from group communication to one-to-one communication. This quiet, relaxed ending to the workshop also provides opportunities for participants to communicate one-to-one with each other or with the site coordinator for the workshop.

Evaluation

Please complete this brief evaluation form to help us improve future Information System workshops. Thank you for your candid evaluation.

Directions: Circle the number on the following items that indicate your rating of the instructor(s) and program.



	Poor	Fair	Excellent
Instructor(s) Evaluation			
1. Was well prepared and organized	1	2	3
2. Demonstrated enthusiasm for the subject	1	2	3
3. Stimulated me to think about how to use the information	1	2	3
4. Used appropriate visual aids	1	2	3
Program Evaluation			
1. A Management Information Audit	1	2	3
2. Critical Success Factors for Your Business	1	2	3
3. Strengths and Weaknesses of your Farm's Information System	1	2	3
4. What's Possible	1	2	3
5. Setting Priorities for Improving Your Farm's Information System	1	2	3
6. Overall Workshop evaluation	1	2	3

Other Comments

Figure 4.6.1 (Workshop Evaluation)

4.6 – WORKSHOP EVALUATION

The final work sheet to be completed by participants is a workshop evaluation (Figure 4.6.1). You can distribute workshop evaluation forms along with the "Objectives and Strategies for Your Information System" work sheets. Instructing participants to place their completed evaluation forms in an envelope near the door as they exit makes it easier for them to preserve their anonymity.

This form evaluates both the instructor(s) and the workshop program. The suggested form is designed to be brief and easy to complete. It also rates each segment of the workshop separately. Average scores for the instructor(s) and the program can be calculated to assist in preparation of future workshops. Low scores

may indicate areas which need improvement in presentation or content.

Some universities and many organizations have their own standard educational program evaluation forms. These could certainly be substituted for the one shown in Figure 4.6.1. However, you should, if necessary, modify any such standard form to obtain feedback

on each segment of the program individually.

Though the form in Figure 4.6.1 could be modified to provide more, or fewer details, keep in mind that by this time in the workshop, participants have completed seven different work sheets. A lengthy evaluation may discourage careful completion of the form, reducing the usefulness of its results.

CHAPTER FIVE: WORKSHOP FOLLOW-UP

One advantage of *Information Management for Your Farm* workshops is that facilitators become very familiar with the farms represented. An opportunity exists to provide personalized suggestions and feedback for individual farm information systems. The detailed data on farm information needs that can be collected can provide benefits to both farmers and facilitators. Providing individualized feedback is both demanding and rewarding.

One good approach is to offer participants a set of written comments within about four weeks of the workshop. It is to provide these comments that the workshop participants are asked to provide their completed work sheets. These are the source materials used in analyzing their information systems.

Participants should also be specifically asked to give permission for the information on their work sheets to be copied and retained by the facilitators for future reference. This should be done in a way that guarantees the privacy of individual data. Participants can be asked to indicate their approval for this by signing the farm summary work sheet that they turn in with their work sheets.

When participants seeking individual feedback leave their filled out mailing labels and envelopes with work sheets with you, you should be sure to instruct them to keep their learning style inventory materials, provided they have

recorded their learning style on the goals work sheet.

You should budget about one hour to develop responses for each farm in a workshop. An example of the type of feedback that could be provided is shown in Figure 5.1. You can begin with some positive general comments about the workshop, then discuss important aspects of each work sheet in turn. You should point out areas where the management team appears to excel, as well as areas which could use additional attention and effort.

It may often be possible to direct the operators of an individual farm to specific resources available within their area or state. For example, Figure 5.1 directs "Bob and Carol" to contact a direct marketing specialist for information on marketing options for winter pears.

It is also beneficial to include materials which may be of use in specific circumstances. "Bob and Carol" can, for instance, receive information on partnership arrangements with their feedback because their concern with equitable allocations of revenue and expenses had an impact on their information system needs. View the follow-up activity as a way to tailor the general concepts discussed during the workshop to individual operations.

If you retain photocopies of participant work

sheets in your file for possible future reference and individualized feedback, you should return the original work sheets along with the initial feedback and supporting materials. For those individuals who do not give permission for copies of their work sheets to be retained,

you should return their original work sheets to them with the feedback, along with all supporting materials. However, do always keep file copies of any feedback you provide, for potential follow-up meetings with, or calls from, participants.

University of XYZABC

Multi City Campus

Department of Agricultural and Applied Economics

1234 First Avenue city state zip

000/000-0000 Fax 000/000-0001

MEMORANDUM

Date: November 20, 199X

To: Bob and Carol

From: Xxxx Xxxxxxxx, Zzzz Zzzzzz

Re: Comments and Suggestions for Information Management on Your Farm

We enjoyed working with you during the workshop on "Information Management for Your Farm." We have gone through your work sheets (which are enclosed with this memo) and have a few comments and suggestions for you to consider as you begin to implement some of your strategies for improving your farm's information system.

From the Management Style Work Sheet, we note that Bob is a "diverger" and Carol is an "assimilator." This suggests you both like to learn by watching things and paying attention to details. Bob is more likely to base decisions on "gut feelings" about what is right, while Carol may prefer to do a more thorough, logical analysis before making decisions.

On your Goals Work Sheet, you both identified goals that emphasize financial performance, production quality, and environmentally sound practices. Your goals were in relatively close agreement. The critical success factors you identified emphasize production and marketing. Given your goals, these are certainly appropriate factors.

You have made a good start in identifying general categories of information needed to monitor how well you are doing in these critical aspects of your business. As you look these over again, though, try to focus in on specific information items that are especially relevant. For example, some of the items you listed under "maintain high quality" are good indicators of quality after the pears are harvested, but are there indicators you can watch during the growing season to make sure you are getting that high quality? We know this is a tough question (one that we do not have the knowledge to answer for pear production), but it is one that is worth asking about each of your critical success factors.

Figure 5.1a (Sample feedback letter — page 1 of 2)

Bob and Carol
November 20, 199x
Page 2

From your Strengths and Weaknesses Work Sheet, it looks like you are making good use of your own production records. You are also getting good information from some of the specialists who work with your operation. On the other hand, the weaknesses you have identified point to problems with some of the other people you work with.

Your first objective for improving your information system is to reduce office time related to record keeping. In the near term, the steps you have identified for meeting this objective are appropriate. In the longer term, though, your comments on the Strengths and Weaknesses Work Sheet about lack of family involvement and your own ages suggest that the best way to reduce the time you spend in the office may be to shift some management responsibilities to other family members or to an outside partner. This would free up more of your time for evaluating production practices (your second objective) and investigating pear marketing alternatives you referred to in your third objective. If new partners are added to your operation the enclosed materials on partnership arrangements may be useful. We would also suggest you contact Aaaaaa Aaa, Direct Marketing Specialist (987/123-4567) to explore direct marketing options for your winter pears.

We hope these suggestions will be helpful. If you have additional questions, please do call us.

Thanks for participating in our workshop.

enclosure

cc: Aaaaaa Aaa

Figure 5.1b (Sample feedback letter — page 2 of 2)

REFERENCES AND RESOURCES

REFERENCES

- Bullen, C.V. and J.F. Rockart. A Primer on Critical Success Factors. CISR No. 69. Center for Information Systems Research, Sloan School of Management, Massachusetts Institute of Technology, June 1981.
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- Rockart, J.F. "Chief Executives Define Their Own Data Needs." *Harvard Business Review*. March-April, 1979, pp. 81-91.

RESOURCES

FIGURES FROM THE PUBLICATION

Most of the figures used in this publication are available as transparency masters, on request to Robert P. King, Department of Agricultural and Applied Economics, University of Minnesota, 1994 Buford Avenue, 130 Classroom Office Building, St. Paul MN 55108-6040.

LEARNING STYLES MATERIALS

Learning Styles Inventory materials originally developed by David Kolb were used in developing this facilitator's guide, and commercial sources exist for obtaining copies of those materials. They are not, however, the only materials that can be used for evaluating individual learning styles. Instruments that a facilitator may be more familiar with, such as the *Myers-Briggs Type Indicator*, can be substituted, though the workshop facilitator will need to modify the figures illustrated in this volume accordingly.

Work sheet packets for the *Learning Styles Inventory* can be purchased from Excel, Inc. Contact them for current costs.

Excel, Inc.
200 W Station Street
Barrington IL 60010
(708) 382-7272

An *LSI User's Guide* is available from McBer & Company. Contact them for current costs.

McBer & Company
116 Huntington Avenue
Boston MA 02116
(800) 729-8074
(617) 437-7080 (in Massachusetts)

