

# **POSITIONING THE FARM BUSINESS**

by

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June 1998

**Department of Agricultural Economics**

**Purdue University**

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## Abstract

Successful farming requires a clear understanding of the forces shaping agriculture and the direction that the farm is headed. Success also requires an effective method for executing and monitoring both strategic and operational plans. This paper provides an introduction to strategic planning and its application to the farm business. The material in this publication provides a brief description of the strategic planning process, reviews areas in which farm operators make strategic choices and some of the risks that accompany these strategic choices, illustrates the use of process planning methods as a means of linking strategy and operations, and describes the use of benchmarking as a method for monitoring progress and improving performance.

While this material provides several suggestions for developing and implementing strategic plans, the focus should be on the process, not the plan. Successful strategic plans are seldom created by a one-time planning effort. Rather, they evolve by a continuing process of assessing business strengths and weaknesses and assessing opportunities.

Keywords: Strategic management, Strategic planning, Farm management

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## **Introduction**

Successful farming requires a clear sense of what the firm is about and where it is headed. With the dramatic changes in the agricultural sector, at no time has the need for such clarity of purpose on the farm been greater than it is today. All farm firms are challenged to identify their competitive strengths and to develop strategies for maintaining their competitiveness. Strategic planning addresses these challenges and, as a result, strategic planning skills can be a valuable addition to the management toolkit. But planning isn't enough — the plan must be implemented, the operating performance from implementing the plan evaluated, and the plan or implementation reassessed if performance is not up to standards. That process of developing a strategic plan, implementing that plan, and continuously assessing and revising the plan or its implementation is the focal point of this discussion.

## **Thinking Strategically**

In the past, farming success has depended primarily on the ability of management to develop an efficient operation. In producing agricultural commodities, it has been critical that management develop methods that allow the farm to achieve a cost of production better than the industry average. Successful producers have developed the skill to evaluate new technologies, assess the trade-offs between inputs and monitor their use, and make adjustments in production processes in order to achieve high levels of output and control production costs. The continual introduction of new products/technologies for use on farms has provided significant rewards for concentrating on production or *doing things right*.

With the continued industrialization of farming, there will be a growing importance associated with the development of a clear strategy to guide the farm business. Strategic decisions are associated with such things as the product mix of the farm, marketing linkages, and the financial structure of the business. The relationship between farm input suppliers and purchasers of farm production continues to change as identity preserved production increases. The use of contract production increases the importance of carefully selecting partners since payments for products will depend on the financial health of the partner rather than the market. In this environment, success in farming will continue to require that operations be efficient, but there will be a growing payoff to strategic decisions or *doing the right thing*.

How	What	
	Clear Strategy	Unclear Strategy
<b>Effective Operations</b>	<p>I Clear strategy and effective operations have equaled success in the past and will in the future.</p>	<p>II Unclear strategy but effective operations have equaled success in the past, but success is doubtful in the future.</p>
<b>Ineffective Operations</b>	<p>III Clear strategy but ineffective operations have sometimes worked in the past in the short run, but competition makes success doubtful in the long run.</p>	<p>IV Unclear strategy and ineffective operations have equaled failure in the past and will in the future.</p>

Source: Tregoe and Zimmerman

Figure 1. Evaluation of Strategic and Operational Performance

As illustrated by the chart in Figure 1, strategy is concerned with what is to be done and operations is concerned with how products are produced and marketed. A clear strategy and effective operation — quadrant I — leads to success. An unclear strategy and ineffective operation — quadrant 4 — leads to failure. In quadrants II and III the outcome is less clear.

The strong production focus of most farmers has resulted in many farms possessing a highly efficient operation. In some cases, the efficiency of the operation has been able to compensate for an inability to predict or quickly recognize what changes in consumer demands, changes in government policy, actions of competitors, and the introduction of important new technologies mean for the farm business. Having an efficient operation provides some “breathing room” for the farm business in this situation.

However, efficient operations are not sufficient to assure success. During the 1980s, the rapid rise in interest rates required many farmers to change the financial strategies that had been used in the 1970s. For those that quickly recognized the new economic environment, changes in financial structure were made without causing extreme financial stress. For those that responded more slowly, it was often necessary to make dramatic changes in the farm business including asset liquidation and downsizing, even though the operation may have had above average efficiency. For those that resisted making the strategic business adjustments called for by the changed economic environment, the ability to develop a highly efficient organization was often not sufficient to insure the survival of the business. As production agriculture continues to industrialize, it will become increasingly important for management to monitor the economic environment for new opportunities and developing threats.

Quadrant III indicates that defining a clear strategy and identifying when to make changes to the strategy is also not sufficient for long term success. For example, farmers have long recognized the importance of monitoring changes in technology. As new technologies are introduced there is

frequently an advantage to being an early adopter. However, if the adoption of the technology results in a less efficient operation, the advantages of early adoption may be lost. As more farms adopt the new technology and are able to increase their efficiency, the less efficient will be at a disadvantage.

### **The Strategic Planning Process**

Thinking strategically is a useful skill for farm business managers to cultivate. Day to day decisions on farms can and often do have strategic consequences. The focus of strategic thinking is on clarifying what is really important in terms of:

- What the business owner wants to do
- What the business needs to do in order to compete and survive
- What the business is capable of doing

Strategic thinking should permeate farm business planning, as well as decision making activities. Strategic planning brings strategic thinking to bear during the business planning process. Every business firm must be capable of competing effectively in the existing business environment and must be capable of dealing effectively with changes in that environment. Strategic planning skills and techniques provide powerful tools for evaluating these capabilities and recognizing change. A strategic business plan should make day to day decisions easier and more consistent.

Any planning activity involves thinking about the future. It is important to recognize that the focus of planning is not on predicting the future, but instead on making better decisions here and now. Farm managers cannot avoid the future effects of decisions made today. But, they can think about what those future effects are likely to be before a decision is made and action is taken. The role of strategic thinking during planning and decision making is to keep management focused on what is really important when making decisions that will influence business success and long term survival.

### **Systematic Strategic Planning**

Perhaps the best way to learn how to incorporate strategic thinking into business planning is to periodically go through a systematic process of strategic planning. This type of process can be particularly beneficial to farm businesses. Because farm firms are usually managed by people who are also providing labor, it is difficult to find the time to manage for the future when daily concerns are pressing. It is easy to fall into the suboptimization trap when making decisions. That is, individual decisions may be based on criteria related only to that particular decision at this particular time, rather than what will help the farm firm achieve its long term objectives. Many farmers appear to rely heavily on an intuitive approach to planning and decision making. Periodically going through a systematic process of strategic planning has the potential to sharpen their intuition and, at the very least, carves out specific time periods for thinking about where the business is headed and how to get there.

One objective of systematic strategic planning may be to formulate a strategy(s) or to identify and recommit to existing strategies. A second objective of systematic strategic planning should be

to identify the factors that will be critical to the successful implementation of the strategic business plan. These will be important in monitoring progress of the plan as it is implemented. A third objective should be to recognize and explicitly state any key assumptions about what the future may hold and upon which success of particular strategic plans may hinge. These will be important when determining whether and how to revise plans.

### **Steps in the Strategic Planning Process**

Systematic strategic planning is usually taught as a series of steps (a process) that one must work through in order to conceive a strategic business plan. Figure 2 depicts one authors view of the process. Usually the steps in the process appear in a particular order as they do in this figure. It is important to recognize that the order of appearance is somewhat arbitrary, because information considered at each point in the process may lead you to go back and rethink previous elements of the process. The basic elements of the process are:

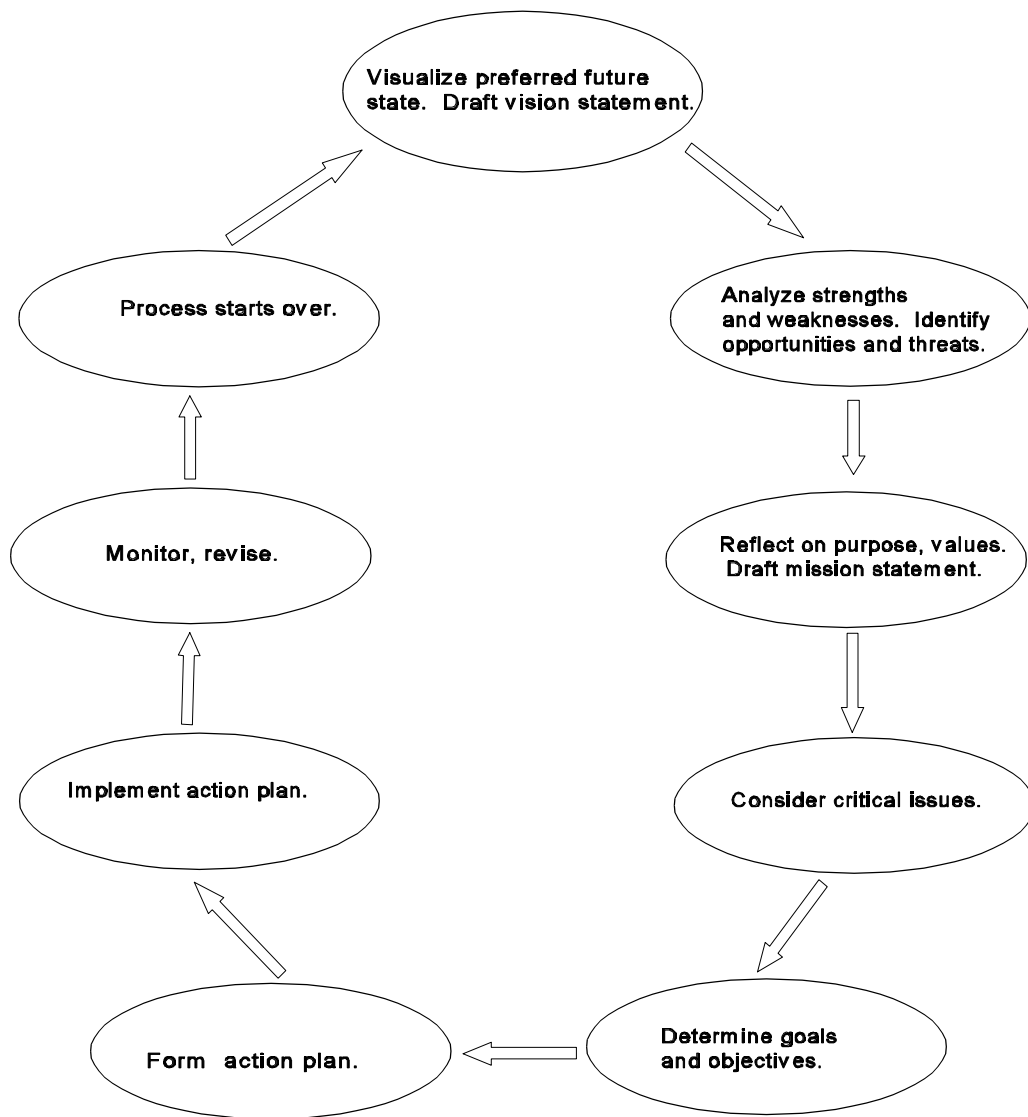
- Develop a clear understanding of what you want to accomplish by farming and why.
- Look outside the farm at the business environment in which you operate in order to identify potential opportunities and threats to your farm business.
- Evaluate your farm business to identify its strengths and weaknesses in terms of being able to compete in its business environment now and in the future.
- Evaluate strategies that appear to fit your situation.
- Develop a plan of action for implementing selected strategies.
- Identify factors that will be critical to successful implementation of selected strategies.
- Recognize the assumptions underlying the selection of particular strategies.

A strategic analysis reviews both the external economic environment in which the business operates and the internal characteristics of the business. This analysis provides data for the development and evaluation of alternatives. It is often suggested that a SWOT analysis be used as a part of a strategic analysis. One part of this analysis reviews general trends in the economy, technology drivers that are shaping the specific industry, changes in government policy or regulations, and potential actions of competitors. The review of these items is done in order to identify threats to the continued viability of the business (the T in SWOT) and opportunities for which the business should prepare itself (the O in SWOT). The SWOT analysis also includes an internal review of the business, identifying its strengths (the S in SWOT) and weaknesses (the W in SWOT). The purpose of the analysis is to bring to the surface the truly critical issues facing the business.



Figure 2. The Strategic Planning Process

## The Strategic Planning Process



Source: Ayres

Each of these elements of strategic planning involves gathering information, reflective thinking, and communication. Obviously, most farmers gather information, think, and communicate with others on a continuing basis in a way that is pertinent to one or another element of this process. An advantage of systematic strategic planning, as opposed to a more piece-meal approach, is the balance struck between the different elements. Systematic strategic planning, by its very nature, emphasizes the connection or inter-relatedness of the different elements of the process.

### **Vision and Mission Statements and Action Plans**

It is customary during the strategic planning process to write a mission statement for the business. The mission statement personalizes the business by outlining "who we are, what we do, and where we are headed." It provides a concise summary of the farm firm's purpose.

Before attempting to write a mission statement, farm firm owners should try to arrive at consensus about what they want the farm to be in the future. Again, a written expression of this desired future for the farm is recommended and is called a vision statement. Unlike the mission statement which deals with what the firm is about and why, the vision statement indicates where the firm would like to be in the future. As such, the vision for the firm provides a basis for establishing the direction in which to lead the firm into the future.

The chore of writing has value, because writing tends to increase the clarity of and commitment to strategic plans. Developing a written vision and mission statement helps to obtain a consensus among the management team about the ideas, values, and principles that will guide the business. It can also be used to communicate these ideas and principals to others that are not in the management team, including employees, creditors, land owners, suppliers, and buyers. The mission statement can also be used to screen opportunities. If an opportunity does not fit with the mission of the business, no further analysis is needed.

It is also customary to prepare a written action plan that includes specific goals and tactics for moving the business from where it is now to where the owner wants it to be in the future. Usually these will be divided into long term objectives, shorter term goals that support these objectives and tactical plans related to achieving each of those shorter term goals.

Strategic planning is not something that you can do just once and be effective. It should be a part of a continual cyclical process of planning and controlling the business. After a couple of experiences with systematically going through the process, it may not be important to continue to be so thorough every time. The important thing is to think strategically every day. Will the actions you plan to take today enhance the farm's competitiveness, fully utilize the farm's resources and your abilities and keep the farm on track toward achieving your vision of its future?

## **Substantive Techniques for Strategic Planning**

Various techniques may be used to facilitate particular elements of the strategic planning process. Two of the more useful techniques are portfolio analysis and competitive analysis. Portfolio analysis methods can be helpful during the evaluation of alternative proposed strategies. Competitive analysis methods can be used to evaluate business strengths and weaknesses.

### **Portfolio Analysis Methods**

Portfolio methods are resource allocation methods. In their most rudimentary form portfolio methods allocate business resources to the array of possible income producing activities on the basis of risk adjusted rates of return on investment. Resources are allocated to those activities with the highest rates of return on investment. One early portfolio analysis technique attempted to allocate resources based on the perceived relationship between the potential for growth in a particular line of business and the firm's relative competitive position in that industry. Other portfolio analyses concentrated on relating such factors as the perceived difficulty of implementing a strategy versus the estimated fiscal benefits.

Given the nature of the environment in which farm firms operate, resource allocation based on return on investment makes a lot of sense. What resources are available and how to allocate those resources to productive investments is a strategic concern that is one of the key issues in determining what the farm firm is capable of doing. This is a concern that has not lacked for attention in agriculture. Farmers have access to several tools for evaluating resource allocation questions such as FINPACK, a computerized financial planning and analysis system, and B-96, a computer program for evaluating resource use by means of linear programming.

### **Competitive Analysis Methods**

Competitive analysis methods, sometimes more aptly described as competitor analysis methods, attempt to profile what other firms in an industry are doing. This information is then factored into an evaluation of an individual firm's strengths and weaknesses. Farm firms compete with each other for the resources to farm. Because most farmers are price takers, their farms must be able to compete on the basis of cost. Competitor analysis provides a powerful tool for determining what production costs need to be if a farm firm is going to be competitive.

Generally the focus of competitor analysis should be broader than merely looking at competitors' costs of production. The narrow view will not tell the farmer enough about where the industry is headed early enough to adjust to rapid changes in an industry. Other things to look for when doing competitive analyses include, but are not limited to, technological changes that are taking place in the industry and changes taking place in the size of individual firms in the industry.

Comparative farm business analysis has long been used in agriculture as a means to assess the strengths and weaknesses of individual farm firms. Detailed farm performance information for different sizes and types of farms is available in certain areas of the United States, such as the Midwest.

## **Doing the Right Thing**

The successful farm business requires key strategic decisions in six areas: business enterprise focus, growth/downsizing, marketing and channel linkages, financial and organizational structure, managerial style/lifestyle and social responsibility. The types of decisions that must be made in each of these areas are summarized in Figure 3. We will briefly discuss and illustrate these six areas of strategic decision making.

Figure 3. Key Strategic Decisions

- |      |   |
|------|---|
| I.   | Business Enterprise Focus                   |
| 1.   | Product                                     |
| 2.   | Production/process technology               |
| II.  | Growth/Downsizing                           |
| 1.   | Focus/Specialize                            |
| 2.   | Intensify/Modernize                         |
| 3.   | Expand                                      |
| 4.   | Diversify                                   |
| 5.   | Replicate                                   |
| 6.   | Integrate                                   |
| 7.   | Network                                     |
| 8.   | Delay/Wait and See                          |
| 9.   | Downsize                                    |
| III. | Marketing and Channel Linkages              |
| 1.   | Sourcing and purchasing resources           |
| 2.   | Merchandising and selling products/services |
| IV.  | Financial/Organizational Structure          |
| 1.   | Business/legal choices                      |
| 2.   | Leasing options                             |
| 3.   | Equity sources                              |
| 4.   | Debt decisions/instruments                  |
| V.   | Social Responsibility                       |
| VI.  | Managerial Style/Lifestyle                  |
| 1.   | Learning new skills                         |
| 2.   | Time/labor contribution                     |
| 3.   | Risk/stress level and attitudes             |
| 4.   | Living expenditures                         |

### **Business Enterprise Focus**

The choice of a business enterprise focus requires a number of strategic decisions. First is the product that will be produced (i.e., corn, soybeans, hogs, cattle, dairy, specialty crops, etc.) and whether that product will be a commodity product or a differentiated product.

Generally, producers have a choice between two quite different strategic directions: 1) a commodity product strategy, and 2) a differentiated product strategy (Figure 4). The commodity

strategy is the most familiar, as exemplified by the production of corn, wheat, soybeans, hogs, milk and cattle. A differentiated product strategy is exemplified by the production of speciality crops such as vegetables for the fresh or the frozen market, and increasingly in the production of crops such as food grade white corn, high oil content soybeans, high protein content wheat, etc.

A second decision is that of the production techniques and process technology. Will hogs be produced in in-line farrow/finish technology or three-site production separating the breeding/gestation from the nursery from the finishing? Will reduced tillage techniques be used in crop production? What about precision farming and GPS technology? Will new measuring and monitoring technology that facilitates collecting information on geographically dispersed production sites (i.e. geographic information systems and precision farming)—thus substantially reducing both the costs and constraints of managing a large acreage—be adopted? And, with the rapid rate of technological advance in agriculture, a very difficult strategic decision is when to abandon aging technology in favor of newer, more productive technology.

Figure 4. Alternative Strategic Directions

<b>Commodity Product Strategy</b>	<b>Differentiated Product Strategy</b>
<b>Production Emphasis</b> — the focus is primarily on production activities rather than marketing or finance	<b>End-user Focus</b> — the focus is on final consumer or food processors needs rather than commodities
<b>Manufacturing Mentality</b> — the science and systematic process of producing food products rather than the art of raising commodities is emphasized	<b>Distribution/Marketing Mentality</b> — marketing and distribution decisions and expectations of consumers are as (or more) important than production considerations
<b>Low Cost Producer</b> — cost control is critical to being competitive in a commodity business	<b>Value-Added Production</b> — the additional revenue to be gained by further processing and distribution is emphasized
<b>Large Scale Operation</b> — larger scale operations generally have cost advantages over smaller scale units	<b>Smaller Scale Operation</b> — a focus on a segmented consumer market and niche markets allows and encourages small scale, more nimble and flexible producers
<b>Outsource Resources</b> — land is rented; machinery is leased or custom hired	<b>Insourse (own) Resources</b> — more land and other resources are owned because the scale of operation is not beyond the financial resource base of the smaller producer.
<b>Open/Impersonal Markets</b> — markets are open to all who meet gross commodity product standards at publicly known prices	<b>Negotiated Markets</b> — responding to consumer needs and producing products with specific attributes requires more direct communication throughout the chain.
<b>Downside Price Risk</b> - excess worldwide production can result in significant downward price movements	<b>Relationship Risk</b> - contracts can be terminated and alliances severed unexpectedly.
<b>Independent Decision-Making</b> - the traditional independent farmer provides most of the managerial and other resources and makes most of the decisions	<b>Interdependent Decision-Making</b> - the negotiated linkages with suppliers and processors reduces independence and forces joint, interdependent decision-making.

## **Growth/Downsizing**

As strategic options are assessed, nine strategic growth/downsizing alternatives are available to the firm. Six of these options deal with growth (increased income or volume, but not necessarily facility size). The other three explore non-growth options.

1. Focus/Specialize — “Stick to your knitting” is a very applicable cliché in this context. The focus of much of a producer’s managerial time is committed to improving efficiency and reducing cost. Lower cost producers will tend to have the ability to stay competitive and maintain future operations. Concentrating on one activity (farrowing or finishing, or hogs rather than hogs and grain) can aid in cost reduction through a more intensely managed operation.
2. Intensify/Modernize — The ability to push more production through the same fixed asset base is the concept. A more intensely run operation spreads fixed costs over greater output, lowering the overall cost of production. Accomplishment of this strategy is possible through both a more intensely managed current operation and the adoption of more modern, more intense production technologies.
3. Expand — The most common strategic move for many producers is expansion of facility size. This over-used method has merit after all possible efficiencies have been exploited with current facilities.
4. Diversify — Diversification, the opposite of specialization, involves the addition of new enterprises to the firm. Generally this option is considered a risk-reducing method. However, due to the fact that the economic forces that affect one agricultural enterprise generally affect others, this option may not be as advantageous for risk reduction as one might think. Diversification may also cause management time to be spread too thinly across enterprises. Diversification may have more potential in the exploitation of synergy by capitalizing on such factors as: underutilized skills and/or resources, multiple products in the same marketing channel, or knowledge and management skills. And if one is serious about diversification as a risk reduction strategy, then the alternatives considered should include investments that are not subject to the same fundamental economic forces that impact agriculture. Such alternatives might include stocks or mutual funds, bonds, non-agricultural businesses, or residential or commercial real estate. Expertise should be obtained in choosing among these investments, just like the best information and expertise is used to choose among various farm or agricultural investments.
5. Replicate — When growth of the firm is the desired course of action, one option to consider is replication of an existing operation on a different site rather than the expansion of the current unit. This option allows for decentralized management in smaller units. It is the multi-plant strategy of the industrial complex. This option becomes important in livestock production as issues of odor nuisance and waste handling become more critical.
6. Integrate — Moving forward, backward, or horizontal into production/processing may provide real benefits to the system. An example is packing plants on the East Coast raising hogs for their plants. This activity helps the packers eliminate some variability in quality and supply. An

example for moderate size hog producers is becoming part of a cooperative gilt multiplier to supply replacement gilts.

7. Network — There are proven economies of size in production and marketing in crop and livestock production. Expanding a single firm to the size where those size benefits are available is not always the most prudent option. Networking allows a group of smaller operators to look like a large operation to the marketplace.
8. Delay/Wait and See — The decision making team may survey current conditions and determine that they are not sure what direction to take. In the short-run, inaction may have merit. “Buying time” may provide for new opportunities to manifest themselves. But the key issue with this strategy is to develop a decision trigger that will result in action.
9. Downsize — There are many in farming who are surveying their situation and wondering if continuing to operate at the current size or a larger size is the most logical plan. Therefore, one strategic size option is to reduce the size of the business. The decision to downsize the business is often linked with a strategy to exit from the business, but this need not be the case. Downsizing may help improve the focus of the business or the efficiency of the business.

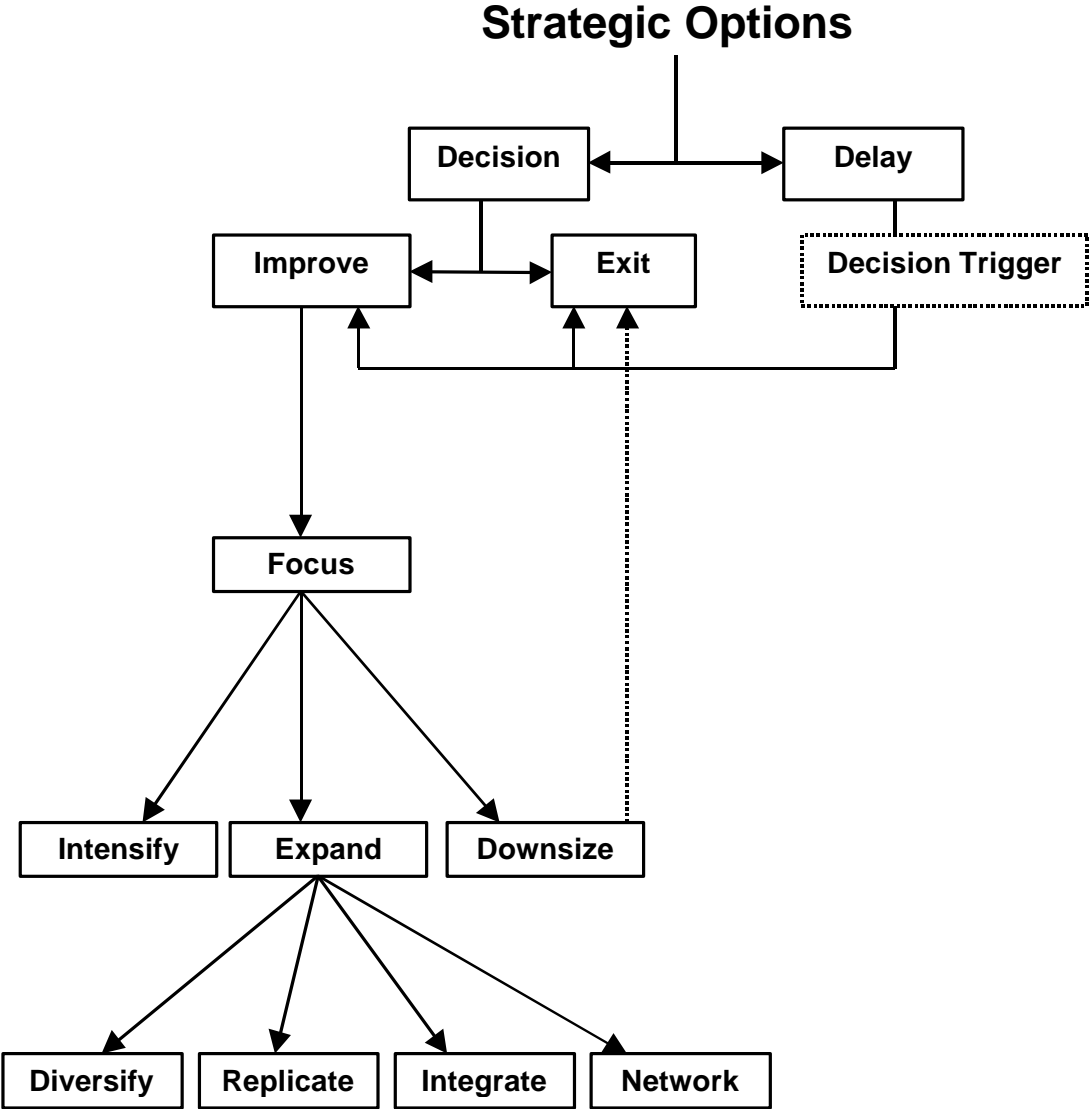
These strategic growth/downsizing options are shown graphically in Figure 5. Starting at the top of the diagram, the initial decision is to either move toward making a decision or delaying. If you use the delay option you need to establish a definite decision trigger that will cause you to move toward a decision. When a decision is triggered, decision-makers are faced with selecting strategies that will lead to improvement or exiting from the business. If the decision is to improve, an initial step is to review the focus of the business. The focus of the business may lead to strategies to intensify, expand, or downsize the business. Expansion is most effective if it is used after all possible efficiencies have been exploited.

Once you have gained the maximum advantage in your existing operation, you should consider additional ways to improve or to expand your business. These include: diversify, replicate, integrate, or network.

### **Marketing and Channel Linkages**

The third area of strategic decision making is that of purchasing or sourcing inputs and selling or merchandising products. Acquiring inputs is in many cases one of the most important strategic decisions made by a firm. If the acquisition cost is too high it is very difficult to restore profitability through improved efficiency in production or enhanced selling prices. If one pays too much for feeder cattle using the open market purchasing strategy, it is hard to offset this high cost of the purchased cattle through improved feed efficiency or rate of gain in the feedlot or negotiating better selling prices for finished cattle. And the various forms of sourcing and selling strategies today are different than those of the past. In addition to cash markets for inputs or products, alternative futures and options markets might be available to source and sell inputs and products. Group purchasing of inputs through networks or other cooperative buying arrangements can not only generate cost savings from volume discounts, but can often result in higher quality or better services

Figure 5. Strategic Planning Options Related to Growth and Downsizing





compared to individual purchases. And contract production and other forms of vertical and horizontal alliances and linkages may be part of the marketing and channel linkage strategy. Strategic decisions concerning acquiring labor, leasing or custom hiring machinery services, and renting land are also critical elements of this area of strategic decision making.

### **Financial/Organizational Structure**

The fourth area of strategic decision making is that of the financial and organizational structure of the business. Many producers tend to inherit their business structure from the past. For example, they are organized as a sole proprietorship, a partnership or a corporation because that's the way it has always been done. They finance their business with contributed capital and retained earnings combined with debt because that is the traditional financing structure for small businesses. But the strategic choices for financing and organizing the business are much broader and more complex than those traditionally used. It has been suggested that there are 50 different ways to finance and organize a farm business, and borrowing money irrespective of the lender is only one of those ways. Key strategic decisions must be made with respect to not only the legal structure, but the business arrangement (for example contract production or joint ventures vs. independent production); leasing options (for example various capital leasing arrangements for equipment and alternative rental arrangements for farm land); forms of equity capital including the possibility of outside investor capital as well as different techniques to retain earnings to contribute to equity capital; and the use of different types of debt arrangements and instruments including fixed versus variable rate loans with different terms from different institutions with different amortization schedules. The choice of the proper financial and organizational structure for the farm business may have as much to do with its ability to withstand risk as the choice of business enterprise focus and marketing and channel linkages.

### **Social Responsibility**

An increasingly important area of strategic decision making for farm businesses is perhaps captured best by the description—social responsibility. Regulators and a wary public are asking producers to be more environmentally responsible. They are asking questions about the possible pollution of surface and ground water and even of air. Concerns about the chemicals used in agricultural production and safety of the food supply are expressed more frequently today than in the past. The way that animals are housed and handled in the production and marketing process is subject to increased public scrutiny. The public, particularly neighbors, are concerned about the location of livestock facilities and the odors that might result. Some are asking questions about worker safety and whether farm employees have a safe working environment. Like it or not, more and more farmers and farming practices are coming under public scrutiny, and the strategic response—whether it be in the form of trying to better inform the public and neighbors, changing cultural practices and production techniques, or choosing a different location for certain enterprises—is critical to the long-term success of the farm business. Most likely, the strategic response will need to encompass more than a “public relations campaign” to convince skeptics that “we are right and they are wrong”.

## **Managerial Style/Lifestyle**

The final area of strategic decision making for any farm business relates to managerial style as well as lifestyle of the manager/operator of the business. Key decisions must be made concerning whether the manager will attempt to make all the decisions and do all the work, or will some of the decisions and/or work be delegated to others. Will consultants be used for certain decisions, or service companies that do certain tasks such as chemical application? Is the manager and organization committed to continuous improvement and learning new ideas, or does it want to stay with the “tried and true” and just do it better than anyone else? Does the operator want to be primarily an operations manager or a general manager? How will the workforce be managed and motivated—with an employer-employee (boss-worker) approach or with a leader-team approach? This area also includes strategic choices about the amount of time and labor contribution the producer wants to make to the farming business compared to other business ventures, off-farm employment, or leisure and family activities. Strategic choices must be made concerning the level risk that can be accepted and the financial and personal stress that can be managed or tolerated. And important decisions must be made about the level of consumption expenditures and living style that are desired and achievable from the farm.

## **What Are the Risks?!**

Farming has always been a risky business, and with changes in U.S. government policy along with increased openness to world markets, growing international demand, and more global competition to supply those markets, even more risk is suggested. The continued industrialization of agriculture has also changed the kinds of risks or the sources of risk that farmers will face in the future.

## **Tactical or Operational Risk**

The risks faced by farms are often categorized as business risk and financial risk. Business risk is commonly defined as the inherent uncertainty in the financial performance of a farm independent of the way it is financed. Thus, business risk includes those sources that would be present with 100 percent equity financing. The major sources in any production period are price, cost, productivity, and production uncertainty; a number of factors may affect this variability over time.

Financial risk or uncertainty is defined as the added variability of net returns to owner’s equity that results from the financial obligation associated with debt financing. This risk results primarily from the use of debt as reflected by leverage; leverage multiplies the potential financial return or loss that will be generated with different levels of operating performance. Furthermore, there are other risks inherent in using debt. Uncertainty associated with the cost and availability of debt is reflected partly in fluctuations in interest rates for loans and partly through nonprice sources. Nonprice sources, a type of institutional uncertainty, include differing loan limits, security requirements, and maturities,

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<sup>1</sup> This material was adapted from materials developed by DuPont Agricultural Products (a), pages 35-39.

depending on the availability of loan funds over time. Thus, financial risk also includes uncertain interest rates and uncertain loan availability.

### **Strategic Risks**

Most of the risk analysis in the agricultural sector has focused on the tactical or operational risks that are associated with production and prices or debt use. Recently, however, strategic risk is receiving more emphasis. The focus of strategic risk is the sensitivity of the strategic direction and the ultimate value of a company to uncertainties in the business climate. These uncertainties include: 1) political, government policy, macro-economic, social and natural contingencies, and 2) industry dynamics involving input markets, product markets, competitive and technological uncertainties. Some examples of strategic risks are summarized in Figure 6 . Tactical or operational risk is easier to manage than strategic risk, in part because of the information available to measure these risks, and because of the availability of accepted tools and techniques to transfer risk to others, such as insurance and futures markets.

Most strategic risks cannot be managed or transferred through conventional futures or insurance instruments or markets. Strategic risk is multidimensional, so managers cannot assume the simple one-to-one mapping between exposures and hedging or insurance instruments. Creative strategies must be developed to manage strategic risk exposure; approaches include flexibility, adaptability, and diversification. In essence, managing strategic risk requires the development of back-up or contingency plans. And one of the better techniques for doing this planning is to do “**what-if**” analysis (i.e., what is my best response if a particular event occurs?).

One of the strategic risks farmers are facing because of the industrialization of agriculture is contractual or relationship risk. The expanding use of contractual agreements and other forms of negotiation-based linkages between the various stages within the agricultural production and distribution system, combined with the decline in impersonal, market-based transactions, results in price risk being replaced by relationship or contractual risk for many businesses. A grower may have a contract that guarantees a price for the crop, but **what-if** the processor goes bankrupt? **What-if** the processor finds suppliers in other areas who can satisfy their needs at a lower price? **What-if** I lose my contract?

Another strategic risk that seems to be increasing in recent years is that of regulatory risk. Farm firms are facing increasing regulation in all aspects of their business transaction. Added to the traditional areas of regulation concerned with transportation, taxation, and labor use are two rapidly growing regulatory areas: food safety and the environment. Strategic risk analyses would ask for example: **What-if** the regulations change and my waste handling and disposal system no longer is in compliance with the new regulations? Developing a contingency plan for these risks will be increasingly important for the long-run survivability of many farm businesses.

Figure 6. Potential Strategic Risk Factors in Agriculture

<b>Source</b>	<b>Hypothetical Examples</b>
International	<ul style="list-style-type: none"> <li>• Political unrest in another country or region leads to economic sanctions against importers of U.S. farm products</li> <li>• Instability in foreign financial markets reduces exports of U.S. farm products.</li> </ul>
Government Policy	<ul style="list-style-type: none"> <li>• A new administration enacts a Farm Bill that eliminates or drastically alters payments to agricultural producers.</li> <li>• The U.S. reduces its efforts to liberalize international trade.</li> </ul>
Government Regulation	<ul style="list-style-type: none"> <li>• Environmental regulatory agencies limit nitrogen use on farm fields.</li> <li>• NRCS prohibits a popular tillage or cropping practice in order to implement more stringent standards for maintaining crop residue.</li> </ul>
Macro-Economics	<ul style="list-style-type: none"> <li>• Comparative advantage for large-scale pork production shifts to areas outside the U.S.</li> <li>• Farmland values start to decline steadily.</li> </ul>
Social	<ul style="list-style-type: none"> <li>• U.S. citizens decide that a popular animal production practice is not humane.</li> <li>• Farming is perceived as the reason that water quality continues to decline.</li> </ul>
Natural	<ul style="list-style-type: none"> <li>• Continued loss of effective antibiotics for treatment of human disease sharply curtails the use of antibiotics in animal production.</li> <li>• Access to irrigation water is threatened by competition for water with fast growing cities.</li> </ul>
Industrialization	<ul style="list-style-type: none"> <li>• Changes in the way the pork production process is managed cause older production systems to become obsolete.</li> <li>• Contract production limits the access of independent producers to high value markets.</li> </ul>
Technological Uncertainty	<ul style="list-style-type: none"> <li>• Patenting of biotechnological breakthroughs and proprietary management of information limit the access of independent producers to the best information and technology.</li> <li>• The tools farmers need to evaluate the causes and effects associated with site specific farming databases are never developed.</li> </ul>
Competitive Conditions	<ul style="list-style-type: none"> <li>• Increasing influence of regional trading blocs, non-tariff trade barriers, and private trade initiatives put U.S. producers at a disadvantage in world markets.</li> <li>• Competition for farmland reduces the opportunity for share rental arrangements.</li> </ul>

## **The Universe of Risk**

When viewed from the broader perspective of both strategic and tactical or operational risks, the total risk that farm and agribusiness firms face is much more complex and more pervasive than is often perceived. In fact, as the agricultural sector increasingly exhibits the characteristics of an industrial model, the types of risks it will face will also change. A taxonomy of the broader dimensions of risk that farm and agribusiness firms will be facing in the future is presented in Figure 7. From both an analytical and managerial perspective, a major challenge in the future will be to quantify both the frequency or probability of occurrence and magnitude of exposure from each of these potential sources of risk.

Figure 7. The Universe of Risk

<b>Categories of Risk</b>	<b>Illustrative Sources of Risk</b>
Financing and Financial Structure	debt servicing capacity, leverage, debt structure, non-equity financing, liquidity, solvency, profitability
Market Prices and Terms of Trade	product price volatility, input price volatility, cost structure, contract terms, market outlets and access
Business Partners and Partnerships	interdependency, confidentiality, cultural conflict, contractual risks
Competitors and Competition	market share, pricing wars, industrial espionage, antitrust allegations
Customers and Customer Relationships	product liability, credit risk, poor market timing, inadequate customer support
Distribution Systems and Channels	transportation, service availability, cost, dependence on distributors
People and Human Resources	employees, independent contractors, training, staffing adequacy
Regulatory and Legislative	export licensing, jurisdiction, reporting and compliance, environmental
Political	civil unrest, war, terrorism, enforcement of intellectual property rights, change in leadership revised economic policies
Reputation and Image	corporate image, brands, reputations of key employees
Strategic Position and Flexibility	mergers and acquisitions, joint ventures and alliances, resource allocation and planning, organizational agility
Technological	complexity, obsolescence, the year 2000 problem, work-force skill-sets
Financial Markets and Instruments	foreign exchange, portfolio, cash, interest rate
Operations and Business Practices	facilities, contractual risks, natural hazards, internal processes and controls

Source: Adapted from Teach, Edward, "Microsoft's Universe of Risk" *CFO*, pp. 69-71, March 1997

## **Strategy and Operations**

The importance of strategic planning to the success of a corporate business has received a great deal of attention in the management literature. This literature has focused on methods that management might use to more easily visualize where the business is headed, communicate the business strategy and long-term objectives to employees and others outside the management team,

and help each person associated with the business better understand the importance of their role in achieving business success.

The literature devoted to small business and farm management has given less attention to these topics. In part, this may be because management and labor is more closely linked in small businesses and farms than in corporations. In some cases, management and labor may be the same person. While the need to communicate these important topics to a large work force may be reduced in a small business, development of a clear vision of where the business is headed, establishing a strategy for achieving this end, and linking strategy to short-term operations remains a difficult and important management task.

Strategic planning is important to maintaining or increasing the competitive position of the farm business. However, development of a sound strategic plan is only one aspect of the integrated management process necessary for success. In describing nine dilemmas business leaders face, Thomas Stewart indicates that the managerial and technical skills that enhance operations are quite different from the vision skills that produce strategy. He goes on to state, "The best strategy in the world won't work if it is poorly executed, but superb implementation of the wrong strategy simply means that Armageddon will come sooner than it otherwise would." Others characterize selecting strategy as doing the right thing, while operations represents doing things right.

### **The Strategic Plan**

In the previous section, several areas in which strategic decisions need to be made were identified. The relationship between strategic planning and operations is illustrated in Figure 8. While both strategic planning and operations can be viewed as several different parts, the boundaries between these parts are not sharply defined. It is often difficult to know where one ends and the other begins.

Using the organizational mission and results from the strategic analysis, choices in each strategic area can be made. The blending of these decisions comprises the business strategy. The strategy will set the overall direction of the farm. It should be noted that while strategies can evolve from plans for the future, they also evolve out of patterns from the past (Mintzberg, p. 24). Strategies derived from plans may not be fully developed. Managers often make choices before all the facts are known. Strategies frequently receive clarity through a series of small steps rather than great leaps. Mintzberg refers to strategies derived from planning as intended strategies and those that evolve from a pattern of decisions as realized strategies.

Long-term objectives describe what the farm wants to become at some point in the future. These objectives will have some degree of measurability, but are less specific than objectives associated with an annual operational plan. Long-term goals help set a direction and help visualize the level of expected performance. As such, they provide targets for assessing our progress in achieving the business mission. Long-term objectives are characterized by 1) Direction — moves you toward the general objectives of the vision statement, 2) Reasonable — are practical and obtainable; not extreme, 3) Inspiring — provide management challenges and provide positive motivation, 4) Visible — the objective can be measured and is easy to visualize, and 5) Eventual — will be fulfilled at a future date (Harsh, et. al.).

Long term goals can be developed in any area, but consider developing a long-term goal for each of the strategic areas defined previously. As an example in the “business enterprise focus” a long-term objective might be to increase the revenue derived from identity preserved crop production. A long-term objective such as reducing per acre machinery ownership costs would be another. In the area of “size/growth/decline,” a goal to achieve an average annual growth rate of 5 percent might be a long-term objective for a young farmer. “Marketing” might have a long term goal of increasing the use of options as part of the marketing program. In the area of “financial/organizational structure,” there might be an objective of increasing the farms ability to respond to changing market conditions have a long-term objective to reduce the quantity of pesticides used in our crop production system by 30 percent. Under "managerial style/lifestyle" we may have the objective of improving our understanding of statistics in order to make better use of the site specific yield and input data that we have been collecting.

Using the strategy and long-term objectives for the business, resource requirements are estimated and strategic thrusts selected. Strategic thrusts provide a bridge to the operational plan. Strategic thrusts are action and results oriented, laying out the details of the strategic plan in order to allow top management to monitor progress and review results. Development of strategic thrusts is the time when the strategy and long-range objectives really get tested. Is the plan realistic? Will it work? Do the know-how and resources to make it happen exist? Who will be accountable for specific results? The strategic thrusts specify how the long-term objectives will be achieved. Since these tasks will need to managed along with the day-to-day operations of the business, the number of strategic thrusts must be limited.

Because of the changing business environment, actions of competitors, and uncertain forecasts in the development of a strategic plan, it is essential that management periodically review the economic environment and progress towards its strategic objectives. These checks serve as a control mechanism and provide feedback for the implementation of the plan. Results management symbolizes this monitoring process. Monitoring the strategic plan is similar to monitoring cash flows. This monitoring process involves identifying the critical performance indicators, specifying a level of achievement, setting a time frame for accomplishing the performance level, and comparing planned and actual performance. If important deviations from planned performance are found, corrective action will need to be taken.

### **The Operational Plan**

If the objectives set forth in the strategic plan are to be achieved, it is necessary to make progress towards these objectives on a day-by-day basis. This is the role of the operational plan. The operational plan focuses specifically on how the business will achieve short-term objectives. Again, the operational plan is comprised of several closely related parts. The operational analysis is characterized by a review of the production, marketing, and financing processes used on the farm. Are there ways that we might be able to improve efficiency? Are we using the right combination and quantity of inputs? Are there ways that we can more effectively utilize the biological processes that are part of farming?

Figure 8. The Integrated Planning Process



The operational plan also identifies those areas that are key to success and the types of performance indicators that will be used for monitoring. These performance indicators provide feedback on the operational plan so that needed corrections can be made in a timely manner. These indicators will need to monitor physical, financial, and quality attributes of production.

Development of short-term objectives and action plans are also an important part of the operational plan. Compared to the long-term objectives, short-term objectives are much more specific—these objectives are set to achieve a particular detailed result. These goals must also be measurable so that there is a way to determine if the goal is achieved. They also have a deadline for achievement.

The results that are monitored as part of the operational plan can provide two types of feedback. First they provide a reading for how well the operational plan is working and where changes may be needed. These results also provide feedback for the strategic plan. This feedback is crucial to determine if the strategic plan needs to be revisited and revised. Reassessing the strategic direction or strategic plan (i.e., returning to the outer circle of Figure 8) could be triggered by any one of the following four events:



1. The actual performance in any one year or production cycle is significantly lower (25% or more for example) than expected in any one of the key results areas, and that difference is not easily explained by uncontrollable events such as the weather (or disease outbreaks) or the inadequacy of the operational plan.
2. The actual performance over a number of years or production cycles is modestly but consistently lower (10% or more for example) than expected in any one of the key results areas, and attempts to close this gap by different implementation procedures of the operational plan have not been successful.
3. An assessment of the external environment or business climate in which the firm operates indicates that major changes have occurred, providing new opportunities or presenting new challenges.
4. Changes in the resource base of the business have fundamentally altered the strengths or weaknesses that the business possesses, thus opening up new strategic alternatives or making some current strategic trusts difficult and costly to implement or operationalize.

### **Integrating Strategic and Operational Plans**

For small businesses in which business and family interests are closely linked, and where labor and management are provided by the same individuals, it is important that strategies and long-term goals be incorporated into operating plans and results management for at least two reasons. First, maintaining an emphasis or focus on a particular strategic thrust can be sustained for only short periods of time. Devoting additional management time to these priorities means that other important but less critical areas of the business will receive less attention. Everything can't be a strategic thrust. Over time with changes in the business environment, it will be necessary to turn management's limited time for strategic thinking to other areas. Second, the development of a routine method for monitoring the implementation of the plan will allow the responsibility of monitoring performance to be dispersed throughout the organization. Developing appropriate operating and monitoring procedures will enable employees that are not part of the management team to aid in supervising the implementation of the strategic plan. This will allow management to devote more time to strategic issues.

The integration of strategic plans, operational plans and results management can be illustrated by thinking about a trip that we might undertake. First, a vision of all the benefits that will arise from taking this trip might be envisioned—time away from all the daily hassles, a chance to relax on a sandy beach taking advantage of a cool ocean breeze, and tasting new exotic foods. We will need to do some analysis to determine the resources that are required and what resources are available, establish where it is that we will go (the long-term objective), and develop a general plan with targets (strategic thrust) that will allow us to achieve our vision.

An operational plan for getting to the destination and back home will need to be developed. If the trip is short, this might only involve filling the car with gas and consulting a map for an acceptable route. If the trip is long and for an extended period, it might involve making airline and

motel reservations, renting a car, planning what sites will be visited, etc. We also review our calendar and select a date for the trip.

As we set out on our trip, we monitor our progress and sometimes adjust the implementation of our plan. The weather delayed our arrival and we missed our connecting flight—the implementation of our plan will now need to be changed. In some cases, unexpected events have such a big impact that we decide to change our mission—we decide not to go. The operational plan and results management help us develop a routine for implementing the strategic plan.

### **Doing Things Right—Operations Analysis and Process Control**

Although most farmers have been quite successful in “doing things right” — getting the job done — if you ask them how they do it, they struggle with an explanation. Farmers have figured out techniques and procedures to use to manage around the uncertainties of spring rains and get the tillage and planting operations done in a timely fashion. But if you ask them to set these rules down so that an employee or someone else could follow them and duplicate what they do, it is virtually impossible for them to do so. That is what operations analysis and process control is all about — formalizing the steps, procedures, and protocol used to get the job done efficiently and accurately.

There are three fundamental purposes for doing operations analysis:

1. To identify the specific sequence of steps so that bottlenecks can be identified and improvements in production processes made. This is increasingly important as farms grow in size, extended over greater geographical distances and have a larger number of employees.
2. To more effectively communicate to others the processes and procedures used to accomplish a task, enabling the routinization of work activity so that others can accomplish it in a most efficient and effective manner.
3. Improve the quality of the product produced. This is increasingly important as farmers move into the production of differentiated products and adopt a continuous improvement mentality. The concept of continuous improvement is that no matter how good we are, there always is some technique or procedure we can adopt to improve performance.

### **Process Mapping**

One of the most useful techniques of operations analysis is that of process mapping. Process mapping is simple in concept but tedious in action. To map a process, all of the tasks or actions or activities (both physical and mental) that must be undertaken to achieve a particular end-point or objective are identified. For example, a process might be that of maintenance of a tractor, or it might be more complex such as planting corn on a parcel of land. The process map for tractor maintenance would include such tasks as draining the oil, changing the oil filter, checking the hydraulic fluid, checking coolant levels, etc. The process involved in planting a particular acreage of corn (assuming the land preparation process has already occurred) would include moving the planter to the right field

position, filling the planter boxes with the proper variety of seed, checking soil conditions to adjust the planter depth, initiating and setting up any monitoring or global positioning system, etc.

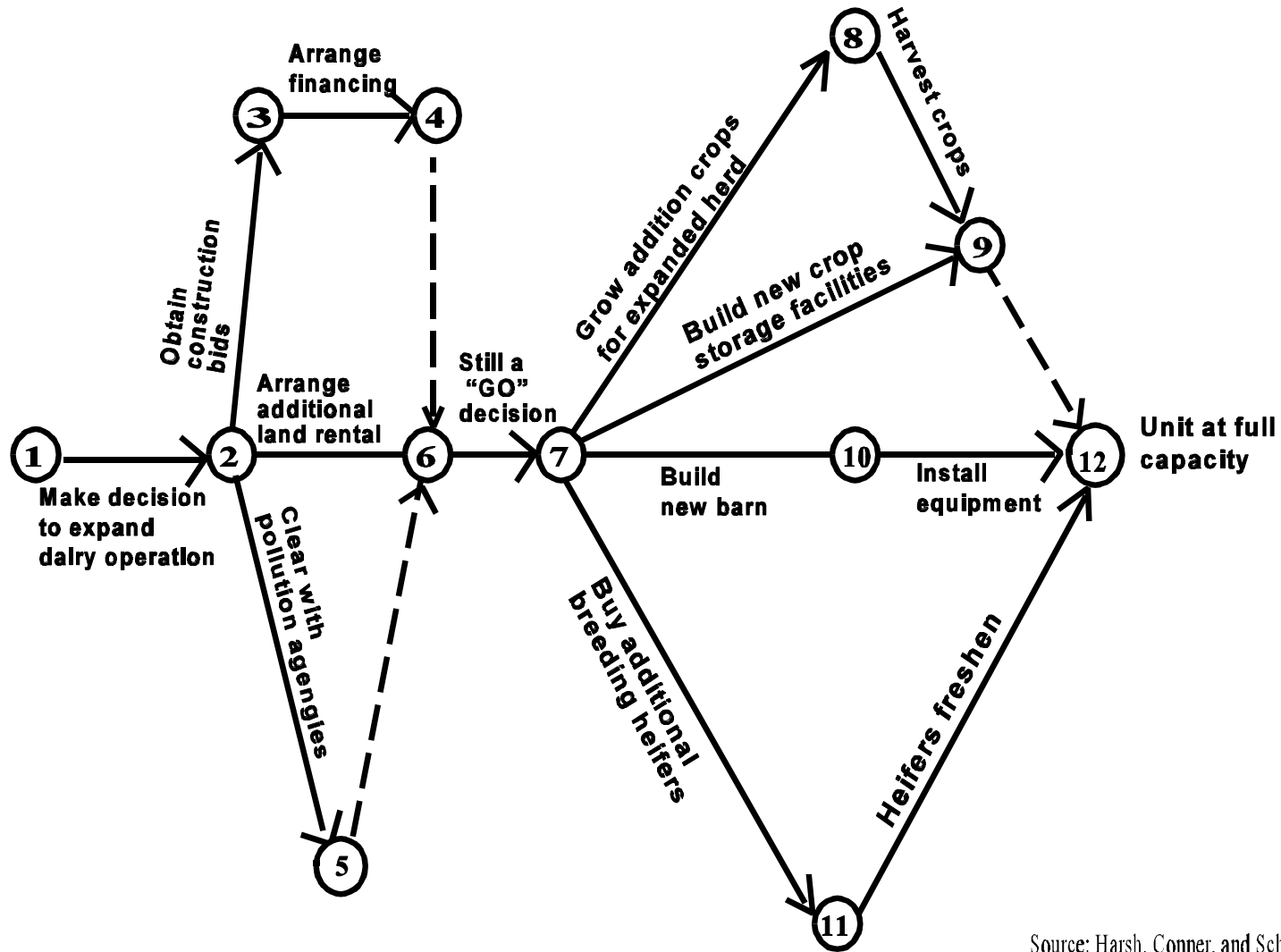
The proper sequencing of the task or activities may have a significant impact on both the effectiveness and the efficiency of obtaining the specified output of the process. Consequently, flow charts are regularly used to identify the sequencing of steps or activities to accomplish or complete the process. An illustrative flow chart for a dairy farm expansion decision is shown in Figure 9. These flow charts may also be summarized in a format known as SOPs (Standard Operating Procedures) which may describe not only the task to be performed and the sequence of those tasks, but also the time that should be allocated to complete the task, other performance characteristics or intermediate results that should be monitored while completing the task, and the corrective action that should be taken if a particular task reveals unacceptable results. For example, a flow chart or SOP for equipment maintenance might indicate that the first task is draining the oil, the second task is checking hydraulic fluid levels and checking for leaks if it is low, the third task is replacing engine oil, the fourth task is replacing hydraulic fluid, the fifth task is checking coolant level and assessing for potential leaks if low, etc.

As one can tell from this example, operations analysis is not difficult, but it is tedious. And although the payoff of SOPs and operations analysis for such simple processes as tractor maintenance may not appear to be all that large, when applied to more complex tasks such as planting corn, harvesting corn, mixing hog feed, breeding animals, milking cows, etc., the benefits in terms of increased efficiency and fewer bottle necks can be substantial. Although most farmers have a mental map or flow chart of every process they complete, committing these mental models to paper facilitates analysis of the proper sequencing of activities in the process. Thus it helps in doing a SOS (search out screw-ups) analysis. And process maps or SOP's are very effective in communicating those steps to colleagues or subordinates. Figure 10 provides a synopsis of the purpose of process mapping and its usefulness.

## **Process Control**

A second fundamental concept in operations analysis is that of process control. The fundamental premise of process control techniques is that processes are usually not in control — that the natural tendency is for systems to not operate as expected. This does not suggest that all systems are flawed or that people who operate systems will intentionally make mistakes — it is only the realistic expectation that most processes are sufficiently complex that variability is normal. Anyone with even the remotest contact with agriculture understands that the biological processes of plant and animal production are not 100% controllable or predictable. But quite honestly the same statement can be made about the mechanical processes used in the manufacturing industries — although the levels of variation may be less in manufacturing because men and machines can exercise more control, variability can still occur because of mistakes by employees or machines that are out of specification because of natural wear and tear.

Figure 9. A Flow Chart of Dairy Farm Expansion



Source: Harsh, Conner, and Schwab

Figure 10. Process Mapping

A tool used to create a visual image of a work process for purposes of examining the costs or efficiency of the activities being performed by the process.

**Purpose:**

All work is a process. All work processes consist of several steps or activities performed in sequence. To improve work processes, it is essential to understand how they work. Problems that can be located through process mapping include slow response time, excessive waiting, uneven work loads, lack of customer focus, unresponsiveness and inefficiency.

Most processes, when analyzed for value added steps, are discovered to have less than 10% of the steps adding value and actually doing so less than 1% of the time. No, these are not typographical errors. Very few steps actually change the product physically in ways the customers care about. This opens the door to significant cost reduction and efficiency improvement opportunities. Mapping processes allow teams to identify and seize these improvement opportunities.

**When to Use:**

When you want to get a better understanding of a process in order to:

- ★ establish baseline performance steps
- ★ define the process step by step
- ★ indicate appropriate and possible improvements
- ★ identify causes of non-value added activity
- ★ identify the new, improved-performance steps
- ★ illustrate to management the old versus the new

Source: PPG Quality Process Quick Reference Guide

The focal point of process control is to identify the amount of variability and determine whether that variability is acceptable or unacceptable, and then to determine the sources of unacceptable variability so that improvements can be made.

Determining what variability is acceptable and what is not requires setting norms or standards of performance for specific tasks or processes, measuring actual performance against those standards, and assessing the cost and consequences of that variation. Although not commonly used in production agriculture, manufacturing industries use statistical process control concepts to set upper and lower bounds of acceptable performance. Variation within the upper and lower bounds is acceptable and indicates that a process is “in control” — i.e., procedures that might be implemented to reduce this variability will be too costly or sufficiently ineffective to generate positive benefits. Variation outside these boundaries provides a signal that the process is “out of control” and procedures should be implemented to reduce the variability and bring the process back “in control”. Although these techniques have not been used in production agriculture in the past, precision farming techniques in both plant and animal production will enable farmers in the future to gather the data needed to utilize statistical process control concepts.

In reality, many farmers think about their business with the same mental frame of mind of those who use statistical process control — they think about what levels of performance are acceptable or unacceptable (i.e., we need to get the crop planted in 7 days, the acceptable feed efficiency in pork production is 3.1 pounds of feed per pound of gain, etc.) and then take corrective action if the variation around these performance standards exceeds say 5% or 10% depending upon the performance measure. Precision farming will help make this way of managing more easily accomplished. The measurement and monitoring systems that are part of precision farming (whether in plant or animal production) will facilitate real time measurement of growing conditions as well as actual growth (for example weight gain or milk production per day, or feed consumption per pound of gain or kernel fill per ear, or soybean flowers per plant) which can then be compared to what is expected to meet planned expectations of efficiency or total output.

If the analysis of variation in process performance indicates that it is out of control, then the manager’s attention should turn to the causes or reasons for this out of control situation. As to why processes are out of control, industrial engineers have identified numerous causes of variability in processes including: materials, methods or processes, machines, people or manpower, the environment, and measurements. For example, unacceptable plant populations might result from inadequate or excess moisture after planting, improper placement of the seed because of the planter design, foreign parts or inadequate skills in planter adjustment and operation, low quality seed, etc.

Identifying these potential causes for unacceptable performance is often a difficult and time consuming task. Analytical techniques such as influence diagrams and fishbone analysis that identify cause and effect can be useful in assessing why a process is out of control. A fishbone diagram to diagnose problems in computer software use is illustrated in Figure 11. A similar diagram of the potential causes of problems in seeding rate and placement is illustrated in Figure 12. Much like the flow chart noted earlier, the purpose of these graphical representations of the process is to systematically analyze and diagnose the potential causes of unacceptable performance. Figure 13 summarizes the purpose and potential uses of fishbone analyzes as part of process control.

## Scheduling

A final task in process control is that of operations scheduling. In reality, operations scheduling is simply identifying the time sequence in which certain events and activities have to occur to obtain acceptable performance. More comprehensive operations scheduling procedures identify for each task or activity:

- 1) The people needed
- 2) The financial resources needed
- 3) The equipment and materials needed
- 4) The information required
- 5) The person accountable
- 6) The time schedule
- 7) The performance monitor
- 8) Actions if performance is unacceptable.

This comprehensive operations scheduling is essential as noted earlier to make sure that operations are compatible with strategic direction. To illustrate some of the aspects of integrated strategic and operational plans, consider a cash grain farm where the business will be going through a transition brought on by the operator's son graduating from college and returning to the farm. As part of the son's return, they have decided to divide the management responsibilities. The father will serve as the general manager of the business and the son will serve as the crop manager.

Since another family will be expecting income from the business, the management team has recognized the need to expand the farm business. They do not feel that they have the skill to add a livestock enterprise nor do they have an interest in livestock production. However, they are interested in becoming involved in the production of specific attribute grain crops. They think that the margin for these crops may be a bit more than the typical corn and soybean commodities. The production of these crops is consistent with their desire to add additional enterprises that will build on their crop production skills. These crops could be added without any additional investment in machinery. In addition, the contract aspect of these enterprises might help to reduce income variations. The management team has established a long-term objective of increasing farm profits by 15% through the production of specific attribute corn.

To monitor their strategy and the operational plan associated with it, they have completed the information in Figure 14. In this table, they have listed important action steps that will be necessary to implement this strategy. Each step is a row in the table. For each of the action steps, they have listed the people, financial, equipment, and information resource requirements that will be needed. They have also identified the individual responsible for the item and the measure to be used to monitor the action. In some cases, the item that is monitored may just be the completion of the task, as is the case with the ensuring adequate soil fertility. In other cases, the item to be monitored might require a specific calculation (purchase seed, fertilizer, and pesticides) or specific information (monitoring crop pests). The final columns in the table include a time table for monitoring the step and possible corrective adjustments to make when performance is less than expected. However, it is also important to consider an appropriate response if levels of expected performance are exceeded.

### **Assessing and Repositioning**

This final step in positioning your farm business is crucial but often overlooked, at least in a formal way. It is taking stock, assessing how well we did, looking at our records to evaluate performance. Did we meet our goals? If so, how and why. If not, why not? Assessment involves the development of control systems and the use of benchmarks.

### **Types of Control**

When developing management procedures, it is important to keep in mind three types of controls: 1) preliminary controls, 2) concurrent controls, and 3) feedback controls. Preliminary controls are concerned with preventing deviations from the plan. This is the type of control used when we identify potential problem areas and develop plans for preventing these problems. Evaluating alternatives under different economic or policy scenarios would be one method of employing preliminary controls. Correctly anticipating potential problems can reduce the need for other types of control.

Concurrent controls enable adjustments to be made during an event. They are based on monitoring actual performance and adjusting the timing, method of use, or level of inputs to insure an acceptable level of performance. These types of controls allow for mid-course corrections. Concurrent controls are widely used to monitor crop and livestock production processes.

Feedback controls are concerned with improving the next attempt. The year-end business analysis that seeks to identify the strengths and weaknesses of the farm business would be one example of this type of control. Another example would be the use of yield monitors and the development of yield maps for fields to help identify where yields were high and low and explain why these differences occurred. Feedback controls also provide the opportunity to modify the other types of control that are used by indicating that additional performance measures need to be monitored or that some the current performance measures are not necessary.

### **Benchmarking<sup>2</sup>**

In order to have any type of control system it will be necessary to specify a set of written standards that can be used in measuring performance—a benchmark.

Benchmarking generally means looking for those businesses that are the best at doing something and learning how they do it in order to emulate them. But this process also occurs in less formal ways. For example, if the cover story in the next *Successful Farming* reports on an innovative use of personnel management procedures for a particular farm, the best farm managers will ask if that might work in my operation as well. There are three important principles of effective benchmarking:

1. Different ways of doing business or levels of performance are appropriate for different environments. It is important, therefore, to benchmark firms in similar environments.

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<sup>2</sup> This material was adapted from materials developed by DuPont Agricultural Products (b), pages 10-11.



Figure 11. Fishbone Diagram for Software Diagnosis

# Fishbone Diagram

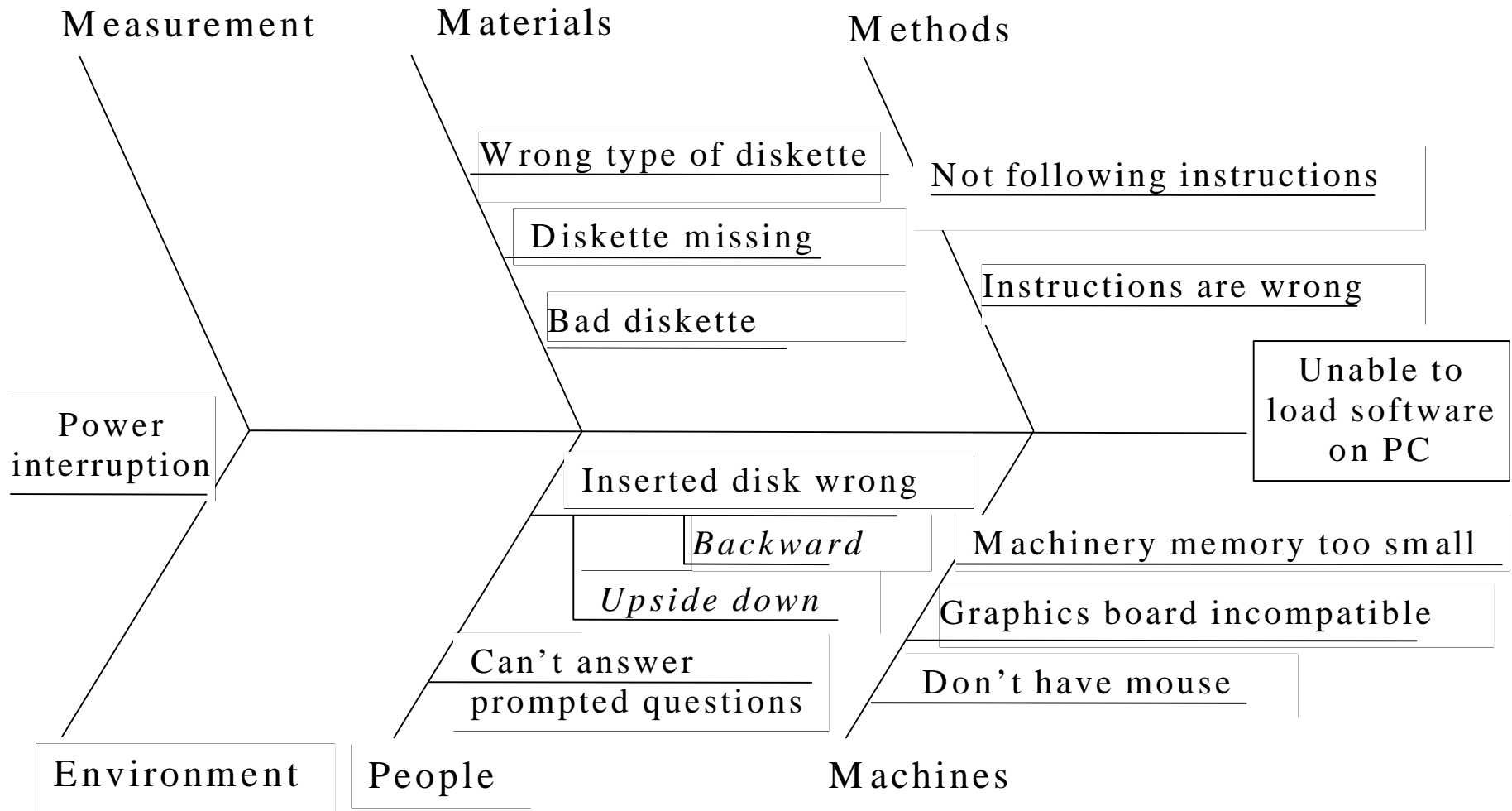
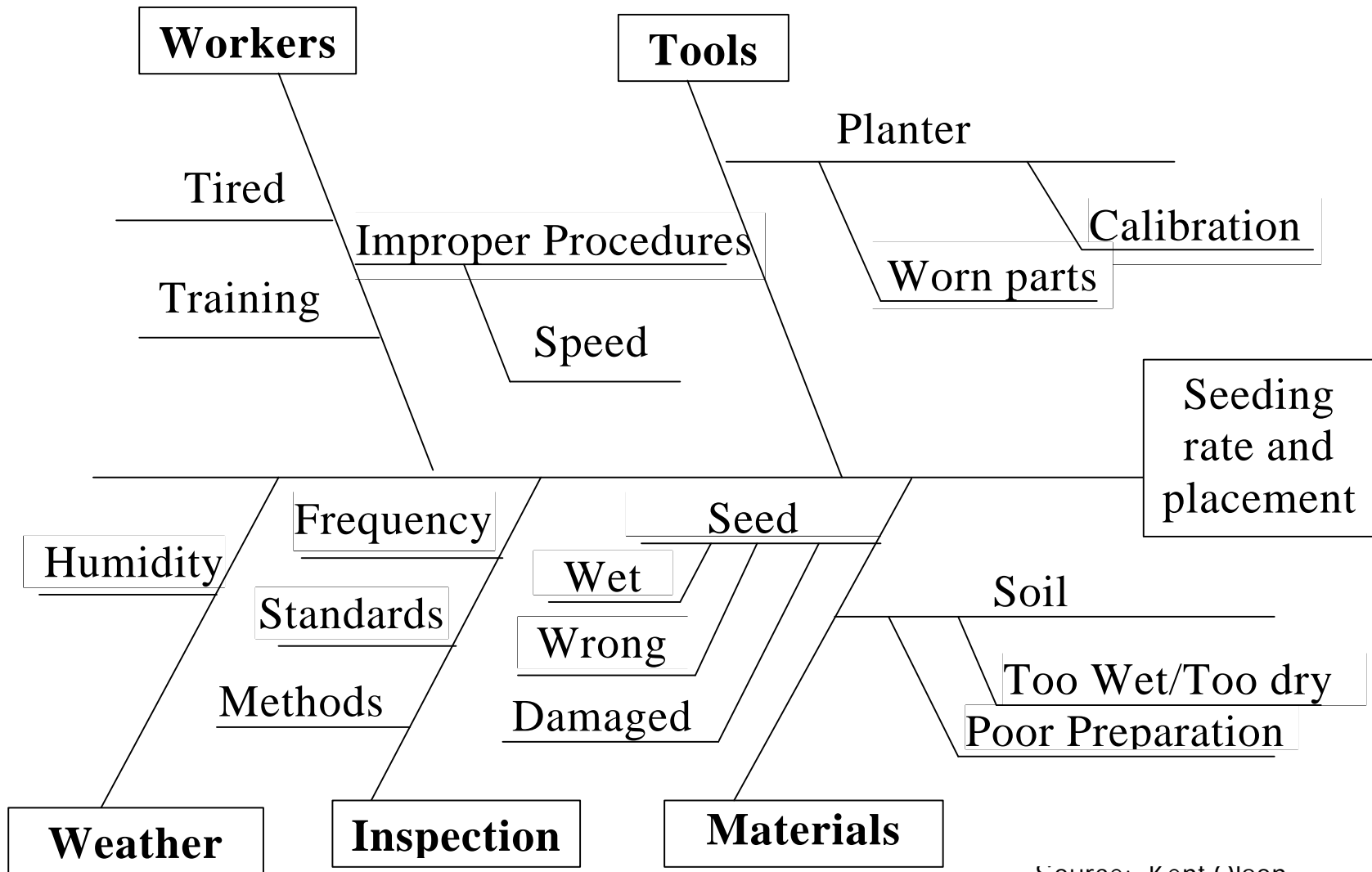


Figure 12. A Simple Cause and Effect Diagram for a Seeding Rate and Placement Problem



Source: Kent Olson  
(University of Minnesota)

Figure 13. Fishbone Analysis

Also known as the cause and effect diagram, or the Ishikawa diagram, named for its originator, Kaoru Ishikawa. The fishbone is simply brainstorming in a more structured format.

**Purpose:**

The fishbone analysis is a type of cause/effect diagram which is used to graphically relate the causes of a problem to the problem itself. It is used to find the primary, or “root cause”, of a problem. It allows us to work on causes for a problem one at a time resulting in uncomplicated solutions.

**When to Use:**

- When broad thinking about possible causes is desired.
- When the team’s thinking tends to fall into ruts.
- When you are trying to determine possible causes.

**Procedure:**

1. Draw the fishbone on a flipchart.
2. State the problem at the head of the fish.
3. Brainstorm the major categories of causes on the main bones (generic headings; People, Materials, Processes, Equipment, Design, Miscellaneous)
4. Brainstorm possible causes for each main bone.
5. Complete the fishbone and let the ideas incubate.
6. Focus additional thought on major bones where there are few items.
7. Gather data to validate and eliminate causes for the problem.

Source: PPG Quality Process Quick Reference Guide

Long-Term Goal: Increase farm profits by 15% through the production of specific attribute corn

Figure 14. Resources and Accountability for Integrating Strategy and Actions

Action Step(Tactic)	Resource Requirements:				Responsible Individual	Performance Monitor	Time Table	Corrective Adjustments
	People	Financial	Equipment	Information				
Select contract crop	General manger Crop manager - 20 hours			Contact provisions Expected yield Expected costs	General manager Crop manager	Estimated contribution margin	January	
Ensure adequate soil fertility	Crop manager Crop consultant Fertilizer dealer - 5 hours	Operating funds for testing		Soil test results Crop nutrient requirements	Crop manager	Reports received	January	Correct deficiencies in spring
Purchase seed, fertilizer, and pesticides	Crop manager Dealers	Operating funds \$7,000		Price and discount	Crop manager	Early purchase lower cost than in-season	February	Delay purchase
Tillage and planting	Crop manager Part-time labor - 40 hours		Tillage equipment Planter -20 hours		Crop manager	Complete by May 10	May	Eliminate tillage operation Change varieties Hire additional labor Cancel contract
Monitor crop pests	Crop manager Crop consultant			Scouting reports	Crop manager	IPM thresholds	May - August	Additional cultivation Pesticide applications as called for.

Figure 14. Resources and Accountability for Integrating Strategy and Actions

Resource Requirements:								
Action Step(Tactic)	People	Financial	Equipment	Information	Responsible Individual	Performance Monitor	Time Table	Corrective Adjustments
Harvest, process, and store	Crop manager Part-time labor - 65 hours		Combine - 35 hours Drier 15,000 bu. of storage	Yield Grain samples	Crop manager	Complete by October 15 Grain moisture content of 14.5% Visual attributes of grain Quality test	October	Custom operators Rent additional equipment Hire additional labor
Monitor stored crop quality				Crop quality standards	General manager Crop manager	Visual attributes of grain Quality test Temperature	October - January	Early delivery
Price grain				Contract provisions Marketing plan Grain prices Outlook information	General manager Crop manager	Achieved price goal	March - December	Delay pricing
Evaluate enterprise/ Assess strategy				Profit Customer satisfaction	General manager Crop manager	Compare to commercial corn Compare to other specialty crop or contract alternatives Relationship with contracting company	November	Renegotiate contract Change companies Review production system Reduce acreage Expand acreage

2. Since it is unusual to find identical environments, it is important to understand the differences in the environments of the benchmarked firms and to take them into account when analyzing the applicability of the information to your own company.
3. It is important to view the benchmark firm as a system of complements. Studying a single feature or aspect of another firm, without considering how it fits with the other elements of the firm, can result in erroneous conclusions.

These principles apply to benchmarking production efficiencies or financial measures.

In specifying a standard or defining a benchmark, it is important to consider the appropriate unit of measure. Financial values such as the rate of return or profits are often used as a measure. However, it may also be desirable to use measures of quantity and/or quality. It will also be necessary to develop methods for collecting, storing, and processing the data associated with actual performance and making comparisons between actual and desired levels of performance.

The standards that are established need to be realistic, yet a challenging target. These standards can be obtained from several sources. One source of standards would be the goals and objectives that are set by the management team. Another source might be budgets or cash flow projections that have been prepared when applying for operating loans. While these cash flow projections may be readily available, they may not be an appropriate source of management standards. Cash flow projections are often conservatively prepared—costs may be biased upward and revenues biased downward in order to avoid an unpleasant surprise. Alternative sources of standards might include performance of the farm or management team during an earlier period, summary data from farms that are similar in type and size, and data from researchers and extension specialists.

There are several different performance measures that can be monitored in any business, far more than we would have time to monitor. Thus for any business a very important question to address is the question of which performance measures are the most important. Those few measures of performance that are of the utmost importance are referred to as the critical success factors. These factors are the small set of performance measures where we must achieve positive results in order for the business to succeed. These critical measures might be of a physical or financial nature. Regardless of the type of attribute, these are the areas where limited data collection and analysis resources will need to be focused.

Just a few comments about financial benchmarks. Financial ratios or benchmarks are intended to help focus attention and ask the right questions. By themselves, financial ratios do not provide answers. Ratios need to be examined by themselves and in relation to other measures. Interrelationships often tell a more complete story, so it is important to be selective in the choice of financial measures. Different measures and performance standards may be more appropriate for evaluating different types of businesses. In addition, it is useful to compare current financial measures with a business's own measures for previous periods, as well as against those of other businesses in the same industry group.

Essentially, analysis is no better than the information it is based on. Financial measures derived from incomplete, inaccurate or inconsistent information can be misleading and often lead to bad decisions. Managers need to be sure they are comparing financial “apples to apples.” Because of the sometimes inconsistent and incomplete methods of accounting employed in agriculture, this may be particularly true for farm and ranch businesses.

The following list gives just some of the factors that need to be considered in choosing accurate benchmarks:

- Is the income calculated on a before- or after-tax basis?
- Was the income statement prepared on a cash or accrual basis?
- Does the income statement represent only the farm business or is it a combination of farm and non-farm businesses?
- Is the business a corporation, partnership or proprietorship?
- Is net income before or after family living withdrawals?
- Was the balance sheet prepared on a cost basis, a market-value basis or something in between?
- Were accrued assets and liabilities included or excluded?
- Were deferred taxes included or omitted?
- If the balance sheet was prepared on a cost basis, how was raised breeding stock valued?
- Does the statement describe only the business, or are personal assets and liabilities also included?
- Are the balance sheet numbers included in the financial measures from the beginning of the year, the end of the year or are they an average for the year?

The operating cycle for many farm businesses is seasonal, so it is important to know whether the income statement information represents the same time period or whether the balance sheet information reflects the same point in time as the business being analyzed. For accurate comparative analysis and for determining true accrual adjusted net income, it is critical that a balance sheet be prepared as of the last day of the business's accounting period. Far too often, farm business analysis relies on a calendar-year, cash-basis tax return and balance sheets prepared as of some date other than year end, usually at the time of a loan request. It is impossible to do an accurate analysis without balance sheets from both the beginning and end of the period for which income is to be measured.

It is also important to know whether the information represents the same type of business as the one being analyzed. Obviously, a dryland row crop farm differs from a confinement dairy. But

there are also differences between a single-crop dryland farm and an irrigated double-crop farm in another part of the country. Even when comparisons are made with groups of the same farm type, questions should be asked about the specific group being used for comparison. In some published studies, industry classifications may be segmented by business size and by quartiles. Averages for some farm record keeping services may represent only farmers in the top 25 percent of the region's producers; thus, the group average may represent a business in the top 15 percent of the total population.

A final comment on financial benchmarking: For many people, graphics are easier to understand than numbers. Therefore, it may be helpful to graph financial measures over time to show historical variability and trends. Graphing can also help make inter-firm comparisons much clearer.

For each critical success factor, you must decide what data will be needed to monitor performance. How will this data be collected to insure consistent reliable data? What procedures will be used to convert the data into a form that is useful for decision making? When is the information needed?

Finally, procedures for reviewing and assessing progress need to be established. How often will such reviews take place? Which items will need to be reviewed on a frequent basis and which will only need an occasional review? Who will be involved in the review? When conducting reviews it will be important to determine why the deviation from the standard has occurred. Perhaps the standards set were too optimistic, or perhaps an unrecognized uncontrollable event had a negative impact on results.

### **A Final Comment**

Strategic planning is not a silver bullet—it will not guarantee success. But it will assist in achieving goals by first making sure the goals are realistic and by providing sharper focus (with fewer potential distractions) for the managers of the business. The process helps to develop creative problem solving skills to identify problems or conflicts, generate new ideas, and provide a context to evaluate technical and economic information.

By developing a strategic plan, the farmer can screen future alternatives that have potential from those that should not be pursued. He can communicate the vision and mission and the strategies — the strategic direction—to those who will help implement the plan—the employees, the lender, the landlords, the suppliers, the family members. The planning process substitutes results-oriented management for hope about the future.

Finally, the focus of strategic planning should be the process, not the plan. It is a continuing process of assessing strengths and weaknesses of the business, opportunities and threats provided by the business climate and the adoption of a strategic direction. Most importantly, it helps pinpoint unproductive courses of action or activities—ventures or enterprises that should not be the focal point of the farm operation. The process provides direction for the business, rather than the drift that often characterizes the evolution of many businesses.



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