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Managerial Services For Farmers—A Look Ahead

W. B. Sundquist*

Shifts in management functions and services in U.S. agriculture are causing much discussion. Two such changes already underway are:

1. Increased management services provided by professional farm managers and farm management firms.
2. Shift in management functions through vertical integration in agricultural production.

This latter shift is occurring through outright purchase of production facilities by integrators and by contracts with farmer producers. Among reasons cited as favoring further integration are:

- Large capital requirements of increasingly specialized production.
- High and increasingly complex technical knowledge requirements in production.
- Need for high quality, uniform products with proper location and time precision for market.

Although some of these considerations are relevant to the production of almost all farm commodities, others apply mainly to products undergoing minimal transformation as they move from producer to consumer. For example, timeliness of product production and quality are generally more important for canning crops than for feed grains, wheat, or soybeans. Therefore, integration might be more prevalent in canning crops.

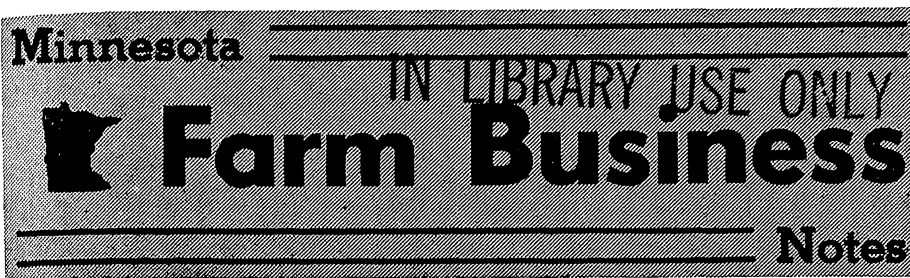
A Third Change Is Developing

Production of some products, not influenced by integration, are nonetheless produced at less unit cost and with increased profit through use of complex modern-day technology. This technology is largely in the form of inputs purchased off-the-farm from farm supply cooperatives, fertilizer dealers, farm chemical suppliers, or suppliers of mixed feeds.

When the increased use of these purchased inputs is considered together with another new development—rapid data processing including adaptation of high-speed electronic computers to management decision problems—a new

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Minnesota's Country Elevator Industry

Ron Kaldenberg and R. P. Dahl

Minnesota's country elevator industry has changed greatly during the past decade. From 1954 to 1960, sizable grain stocks were accumulated by the federal government under price support operations through its Commodity Credit Corporation (CCC). CCC was directed to utilize commercial storage facilities when available. Therefore, by offering attractive rates, CCC provided country elevator operators incentives to expand storage capacity.

Since 1960, however, CCC grain stocks have been sizably reduced. So many country elevator operators, who increased storage capacity during 1954-60, may now have excess capacity.

The U. of M. Department of Agricultural Economics is making a statewide study of the country elevator industry. The purposes are:

1. To observe changes in the number and size of firms.
2. To study economies of size.
3. To project changes needed for optimum efficiency.

This article discusses the market structure of the Minnesota country elevator industry from 1954 to 1964. In this report, a country elevator is defined as a firm licensed to buy grain by the Minnesota Railroad and Warehouse Commission.

Elevator Capacity Increases

The number of Minnesota country elevators decreased from 1,077 in 1954 to 985 in 1964—a decline of 8 percent (see table 1). The average total capacity of these elevators also changed. Average capacity increased from 54,000 bushels in 1954 to 130,000 bushels in 1964—an increase of 141 percent.

Elevators with a capacity of less than 10,000 bushels declined from 247 in 1954 to 225 in 1964 (see the figure). These elevators comprised 23 percent of the total number of elevators in both years. Such small elevators are usually operated in conjunction with a feed, seed, or fertilizer business; often, they are not bonded to store grain for the public.

The proportion of firms with a capacity of less than 100,000 bushels decreased (see the figure). But the proportion of firms in the 11,000-50,000 bushel classification declined most. This decline was due to firms building additional storage and becoming larger or ceasing business operations.

An increase occurred in the proportion of firms with a capacity greater than 100,000 bushels. The proportion of firms in the 150,000-500,000 bushel category increased most.

Increase in Detached Facilities

Increases in capacity occurred mainly in detached facilities. Detached facilities include flat grain storage facilities, bins, and converted coalsheds not attached to the main elevator by conveying equipment. The main elevator refers to the elevator and all tanks, silos, etc., attached to it by conveying equipment.

The average main elevator facilities increased from 51,000 bushels in 1954

Table 1. Number and average capacity of Minnesota country elevators by ownership, 1954 and 1964

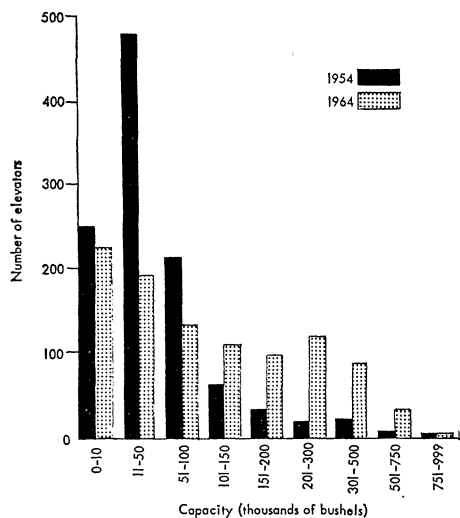
Type of ownership	Number		Total capacity*	
	1954	1964	1954	1964
Cooperative	331	312	23	61
Independent	509	483	19	42
Line	205	120	15	17
Cooperative line.....	32	70	2	9
Total	1,077	985	59	129

* Includes detached facilities.

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Country Elevators . . .

(Continued from page 1)



Distribution of Minnesota country elevators by capacity, 1954 and 1964.

to 69,000 bushels in 1964 (see table 2). This amount was an 18,000 bushel increase or 35 percent.

The average capacity of detached facilities increased from 3,000 to 61,000 bushels—an increase of 58,000 bushels in 10 years. Currently, the average capacity of detached facilities nearly equals the average capacity of the main elevator.

Advantages of detached grain storage facilities are:

- Lower initial investment cost per bushel.
- Relatively short construction period.
- Adaptability of flat warehouse to other uses such as a feed, seed, or fertilizer warehouse.

Due to the uncertainty of the quantity of CCC grain available for storage, many elevator operators selected detached facilities rather than more permanent, higher priced storage.

Disadvantages of detached facilities are the higher cost and time requirements to move the grain in, out, and within the facility. These factors indicate that detached facilities are satisfactory for long-term storage but are not readily adapted to the merchandising of grain.

Another disadvantage of detached facilities, compared to more permanent structures, is that the moisture of the grain has to be lower and more uniform when placed in storage. For example, detached facilities are not well adapted for handling large quantities

of high-moisture corn at harvesttime. And with increased use of corn combines, this situation may become common.

Changes in Ownership

The ownership pattern of Minnesota country elevators has also changed. For this study, elevators were classified as:

1. Local cooperatives owned by farmer patrons.
2. Independents owned by other than patrons.
3. Line elevators owned by other than patrons and forming part of a chain of five or more elevators.
4. Cooperative lines owned by farmer patrons and forming part of a chain of five or more elevators.

Cooperatives, local and line, increased their total capacity from 25 million bushels in 1954 to 70 million bushels in 1964 (see table 1). This change represents two-thirds of the increased industry capacity. The expansion brought the cooperatives' share of total elevator capacity from 42 percent in 1954 to 54 percent in 1964.

The largest change in ownership was in the number of line elevators and cooperative line elevators. The number of line elevators decreased by 85, or over 40 percent, although the total licensed storage capacity of lines did not change. The number of cooperative line elevators increased by 38 or 119 percent.

Role of CCC

The total number of Minnesota elevators contracting with CCC under the Uniform Grain Storage Agreement increased from 580 in 1953 to 623 in 1965—a 7-percent increase (see table 3).

The average approved capacity per elevator increased from 67,000 bushels in 1953 to 187,000 bushels per elevator in 1965—a 179-percent increase.

The ratio of CCC-approved capacity to total capacity licensed by Minnesota increased from 67 percent in 1953-54 to 89 percent in 1964-65. On April 30, 1965, 23 percent of the CCC-approved storage space was utilized by CCC. This amount was considerably lower than the peak utilization (approximately 80 percent) in 1960-61.

When grain storage facilities are used at capacity, roughly one-half of the total cost is fixed. Therefore, the per bushel cost of storing grain rises considerably as the percent of use declines

Table 2. Average capacity of main elevator and detached facilities, Minnesota country elevators, 1954 and 1964

Facility	Average capacity	
	1954	1964
Main elevator	51	69
Detached	3	61
Total	54	130

Table 3. Number, total, and average capacity of CCC-approved Minnesota elevators, 1953 and 1965

CCC-approved elevators	1953	1965
Number	580	623
Total capacity (million bushels)	39	116
Average capacity (1,000 bushels)	67	187

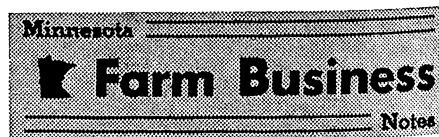
because fixed cost is spread over fewer bushels. Consequently, net storage income declines more rapidly than gross income.

Summary

The trend in the Minnesota country elevator industry has been toward fewer and larger elevators. Most of the increase in storage capacity has been in low-cost detached facilities. Such facilities are better suited to long-term storage than they are to grain merchandising.

Two-thirds of the increase in industry grain storage capacity has been provided by cooperative elevators, giving them a larger share of the industry capacity.

Country elevators must now rely heavily on income from grain merchandising and the sale of farm supplies. Elevators with a small business volume may experience difficulty in adjusting to these changes. Therefore, the number of such firms may continue to decline. ■



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Managerial Services . . .

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concept in *managerial services* becomes a real possibility.

Technology And Economics Combined

Several developments in modern production technology were already mentioned. In crop production, these developments include improvements in bulk handling and the effectiveness of concentrated commercial fertilizers and agricultural chemicals. Other purchased inputs important in crop production are tractors, machinery, and power fuel.

Management becomes important when determining the most profitable acreage of each crop to plant, the plant population to attain, the time and rate of pesticide and fertilizer treatment, and related management practices. The most profitable use of production inputs is, in turn, determined by such economic factors as their cost and the price of commodities produced. It is also affected by such physical and biological factors as soil moisture, nutrient level of soils, and weed infestation.

Increasingly objective and accurate measures are being developed on the influence of soils, agricultural chemicals, plant nutrients, water, and energy on crop yields and quality. A corresponding set of measures is being developed for factors affecting livestock production. The final coordination of this information into managerial recommendations can be accomplished with computer techniques. These techniques determine consequences of alternative practices on profits.

A soybean system, being developed by a major agricultural chemical firm, provides an example of a management "system" combining technology and economics. According to a report from the firm: "This is a total crop production system for the soybean farmer based on selected varieties, special fertilizers, pre-emergence chemical weed control, alteration of between-row and within-row plant spacing to insure maximum energy utilization, a special growth regulator to change the shape of the soybean plant and reduce lodging, plus advanced computerized information on moisture supplies."¹

Much remains to be done in improving technical information and computer techniques and in combining them into effective management systems. However, extensive applications of such systems appear near at hand.

Incentives To Provide Management Services

Suppliers of farm inputs are providing management services to producers because they can financially benefit from volume sales of a broad line of farm supplies. According to the president of a major farm supply firm: "A farm unit which has an annual requirement of 12,000 gallons of power fuels, 600 gallons of LP-gas, 100 tons of feed, 150 tons of plant food, and \$1,000 worth of agricultural chemicals will command more attention from one supply firm than it would from any combination of two or more. A \$20,000 order will justify the time of an agronomist to assist in planning a fertility and chemical program, and the time of an animal nutritionist to help solve a livestock feeding problem."²

Farm supply firms are consolidating and expanding their operations. In that way they can utilize modern bulk handling equipment and expand volume by offering a rather complete line of farm supplies. This trend will encourage their efforts to capture a farmer's complete business for farm supplies by offering him managerial services as well.

The Incentive To Use Management Services

Increased profit is the incentive for farmers to use managerial services. With such service, a farmer is potentially able to improve his business's profitability while still making the management decisions himself.

The adoption of such managerial services by farmers could follow the same adoption pattern as of other technical innovations in agriculture.

Managerial Services In The Future

Provision of managerial services by farm supply firms will not occur on a mass scale in the immediate future. Neither will all farmers in any line of agricultural production seek or be offered such services. Some professional farm management services now offer this kind of service but on a less comprehensive basis than the future holds.

Technical information for the service, as well as improvements in "management systems," will come largely from the State Agricultural Experiment Stations and the U.S. Department of Agriculture. Other data needs will result from extensive research activities of

firms supplying the services as well as other agribusiness firms.

Management services should be: (1) adequately accurate to gain the confidence of many farmer customers and (2) adequately useful to improve the profit situation. The feasibility of providing such services varies by regions and agricultural commodities.

For example, the accurate documentation of major factors (such as moisture) affecting profitable crop production is improving rapidly. Also, the cost of important purchased inputs can be determined in advance. Indeed, advance delivery can often be contracted at specified prices for such items as fertilizers and chemicals. Furthermore, prediction of product prices prior to committing farm resources for a particular season can be quite specific.³ High accuracy in price forecasting would probably result, even if current price support programs were curtailed.

Concerning uncontrolled factors, particularly weather, that affect production and profits, the firm supplying managerial services would have at least as much useful information as would individual producers. Therefore, in major crop producing areas with many commercial farms, such as the Corn Belt, these managerial services may develop rather quickly.

However, livestock production presents a different picture. Price instability and the inability to consistently forecast price changes for slaughter animals and some major inputs (feeder cattle and feeder pigs) contribute greatly to profits and losses. Furthermore, considerable art remains in the purchasing, feeding, and selling of livestock.

Therefore, less rapid development in complete managerial services to livestock producers can be expected. Livestock operations might more typically be completely managed by an individual producer. Or, they might move toward traditional forms of vertical integration where integrators assume at least part of the price risk.

One thing is certain: increased farm size and increased use of purchased production inputs provide financial incentives for farm supply firms to seek the farmer's business and to provide price and nonprice competition in return for this business. Recent advancements in know-how suggest that at least the better managed supply firms will successfully provide this type of management service in the near future.

¹ Remarks of T. J. Army and M. E. Smith, senior research associate and special project director, respectively, International Minerals and Chemical Corp., Skokie, Ill.

² Remarks of Melvin E. Sims, president, Farm Supply Service, Inc., in a talk on "Implications of Structural Changes in the Economy of the Commercial Farm Firm on Farm Supply Firms."

³ Particularly for most grain crops. Potatoes and some other specialty crops would be exceptions.

the outlook corner

Agricultural Outlook-1966

R. O. Hawkins and P. R. Hasbargen

The income situation in agriculture has been relatively favorable in 1965 due, mainly, to reduced supplies and increased demand for many agricultural products. Further expansion in domestic and foreign markets, coupled with small changes in supplies, suggests a continued favorable income picture for 1966.

Crops

The 1965-66 feed grain supply will be considerably larger than last year's due to higher crop yields. (Average U.S. corn yields are expected to exceed 70 bushels per acre for the first time in history.)

The large 1965 crop will likely increase carryover supplies next fall, despite a higher level of feed use during the coming year. With more supplies on hand and lower loan rates, feed grain prices may average slightly below last year's levels.

The 1965 soybean crop is estimated at 866 million bushels. If this yield materializes, soybean supplies, including last year's carryover, will be a record. Although domestic and export disappearance of soybeans should increase, a substantially larger carryover is anticipated at the end of the year. After a harvesttime low, prices will likely be close to the \$2.25 support level plus storage charges.

With an increased demand for soybean oil, soybean meal production probably will be about 13 percent over last year. This increased meal supply, coupled with higher oil prices, suggests that 1966 prices for soybean meal should be lower than 1965 prices.

Meat Animals

Total January-June beef production equaled year-earlier levels. However, steer and heifer beef production was lower. Cow beef production was up 28

percent. Beef consumption in 1965 will be close to the 100 pound per capita level reached last year.

Slaughter of fed cattle is expected to increase 2 to 4 percent in 1966. Cow and nonfed cattle slaughter is expected to decline. Total production should increase by about the same rate as population. Nevertheless, with higher incomes and higher per capita demand for fed beef, fed cattle prices will be higher in 1966 than in 1965.

Feeder cattle supplies are about equal to those of a year ago. With a stronger demand, feeder prices will be \$3 to \$5 higher than in fall 1964. Good to excellent returns are in prospect for both yearling and calf feeding programs, despite higher feeder prices.

Hog prices reached the highest level in 11 years due to 10-percent fewer marketings and a strong demand. Hog marketings are expected to increase seasonally in fall 1965 but remain 6 to 8 percent below year-earlier levels. Consequently, hog prices should be near the \$20 level this fall.

If farmers do reduce farrowings by 7 percent, marketings during the winter and spring quarters will run 5 to 9 percent below a year earlier. Therefore, profit prospects will continue to be favorable through summer 1966.

With some expansion expected in the 1966 spring pig crop, marketings will increase slightly toward the end of 1966. Price will decrease slightly.

The total number of sheep and lambs has declined sharply since 1960. Sheep and lamb slaughter was down 11 per-

cent during the first half of 1965. Slaughter will run 7 to 9 percent below 1964 levels during the fall months of 1965.

Feeder lamb prices will continue higher than a year ago because of decreased supplies and strong demand. However, returns from lamb feeding should remain favorable.

Dairy, Poultry, and Eggs

The year ahead is not likely to produce any great changes in the dairy situation. Total milk production and consumption should increase slightly with production continuing greater than consumption. With government activities similar to last year's, prices received for milk should be about the same.

The hatch of egg-type chicks was down 11 percent from January through July this year compared to the same period in 1964. However, the June and July hatch was 1-percent greater this year. And hatch is expected to be up 5 percent in the last half of 1965 and the first half of 1966 compared to year-earlier levels.

Egg prices for the remainder of 1965 and the first half of 1966 are expected to be 2 to 4 cents above year-earlier levels. Prices in the last half of 1966 should be about the same as those of the last half of 1965.

Broiler prices for the first half of 1965 averaged 2 cents above the same period in 1964. Prices for the remainder of 1965 will likely be about the same to 1 cent per pound under 1964 prices. Broiler production is expected to increase 3 to 6 percent in 1966.

An increase in turkey tonnage of 1 to 2 percent over 1964 is expected during fall 1965. Prices should equal fall 1964 prices. The 1966 turkey crop will likely be up another 1 to 2 percent. ■

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