

# **Faculty Paper Series**

FP 98-3

March 1998

**MANAGEMENT AND INFORMATION AT U.S. AGRIBUSINESSES:  
Perspectives from the Cattle-Beef Sector**

**by**

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**MANAGEMENT AND INFORMATION AT U.S. AGRIBUSINESSES**  
**Perspectives from the Cattle-Beef Sector**

Report on Cooperative Agreement Number 43-3AEK-6-80071  
Submitted to  
Economic Research Service, Commercial Agriculture Division

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**THE MARKET FOR INFORMATION AT U.S. AGRIBUSINESSES**  
**Perspectives from the Cattle-Beef Sector**

**ABSTRACT**

Agribusinesses in the cattle-beef sector use information from both external sources and proprietary sources in the management decision making process. This research reports the results of personal interviews with employees at all levels of the beef market channel, covering the information resources that they value and the priority their firms place on information. Respondents used data on prices and cattle inventories collected by the public sector, data on retail grocery sales made available through private firms, and data and analysis from trade associations. Companies involved in meat packing and retail distribution use information technologies to automate delivery and billing for products and they are investing in improved systems. A barrier to a more efficient supply chain in beef is the incomplete implementation of retail scanner systems for fresh meat.

# **THE MARKET FOR INFORMATION AT U.S. AGRIBUSINESSES**

## **Perspectives from the Cattle-Beef Sector**

### **INTRODUCTION**

This project was part of an assessment of the market for agricultural information initiated by the Economic Research Service (ERS), USDA, which has the following primary objective: to “understand the information markets in which USDA and ERS operate, including who the suppliers and users of information are” (Smith, Ahalt, Surls, and Horwitz, 1996). Information users working in agribusinesses constitute an important, yet little understood, component of the information user community. Agribusiness employees may become a growing part of the clientele for government-sponsored research and market analysis, to the extent that firms are active market participants but they may lack the staff and expertise to conduct analysis. Or it could be that the increasing consolidation of production agriculture and agribusinesses is making government research and analysis less necessary.

The results of the in-depth personal interviews conducted during this project also contribute to the second objective of the overall project: to “determine the relative importance of specific data and information sources for decision making in the agricultural sector.” The agricultural sector consists of many industries, with firms functioning at all levels of the farm-to-consumer market channel. Some specialize in particular commodities while others produce, distribute, or sell a mix of products. All of those firms require information to understand their performance and to formulate long-range plans in the dynamic, competitive marketplace. Whether the most-valued information is obtained from outside the firm, or from proprietary sources, is an open question. The role of information management has garnered a great deal of attention in the general business management literature, particularly the place of advanced technology systems in support of closer links between suppliers and customers in the marketing channel (Fisher, Applegate and Gogan). Terms used to describe these information-intensive management approaches include “value-added chain,” “chain science,” or “supply chain management.” The systems discussed under the heading of “efficient consumer response” in the grocery industry are an example of these management principles applied in the agro-food sector. The study of information management demonstrates the potential efficiencies that firms can garner through enhanced information collection and analysis within the firms, and sharing of information across

company boundaries. The cases outlined in the management literature also illustrate the potential difficulties in implementing information-intensive management.

Drawing upon the management approach, this study focuses on how agribusinesses treat proprietary information, to what extent it is shared with other firms, and the costs and benefits of information technology used in agribusinesses. It takes a slightly different perspective from the case-based management research, in that it encompasses the entire cattle-beef industry rather than a specific company. By taking an industry-wide view, we consider how agribusiness overall may share in, or find barriers to, the efficient use of information systems, including both information about commodity markets and internal management information systems. The market channel for beef encompasses firms of varying organizational forms and sizes, from farmer/ranchers, to intermediaries, to the largest agribusiness corporations. Economic concentration also varies along the beef market channel.

The specific objectives of the research are to:

1. Identify the sources of information on agricultural markets that are valued by agribusiness firms in the cattle-beef complex.
2. Assess the relative importance of proprietary business information versus information gathered from outside the firm.
3. Consider how the level of the market channel in which the firm operates affects information needs of employees and the transmission of information among firms.

The paper contains two sections: first, a description of the beef market channel and the flows of products and information, and second, the compilation of responses from personal interviews with employees from a variety of firms operating in the cattle-beef complex. The interviews highlighted the types of information that were of value and the sources of information that were important to the respondents.

## **BEEF MARKET CHANNEL**

The components of the cattle-beef market channel, from farm to consumer, are illustrated in figure 1. Cash receipts from cattle sales amounted to an estimated \$35 billion in 1996 (USITC); beef retail sales value is estimated at \$50.1 billion in 1996 (NCBA). The arrows in figure 1 denote the movement of products from sources to destinations. The extent of industry concentration varies as the product moves from live animal to finished retail goods. The system resembles a “funnel,” with relatively low concentration at the cow-calf production level, high concentration in packing, and lower concentration at retail (figure 1). Differences in the organization of firms, and the information-related resources of those firms, are also notable. Cow-calf producers are generally proprietorships or partnerships and, except for the largest firms, do not have staff devoted exclusively to information. Cattle feeding companies are larger firms and have some personnel involved in market analysis for both procurement of feed and livestock and marketing of fed cattle. Packing and processing companies typically are entities of large corporations and have access to corporate information staff. Retailers vary in size, but generally have corporate organizational forms and they devote significant company resources to management information systems.<sup>1</sup>

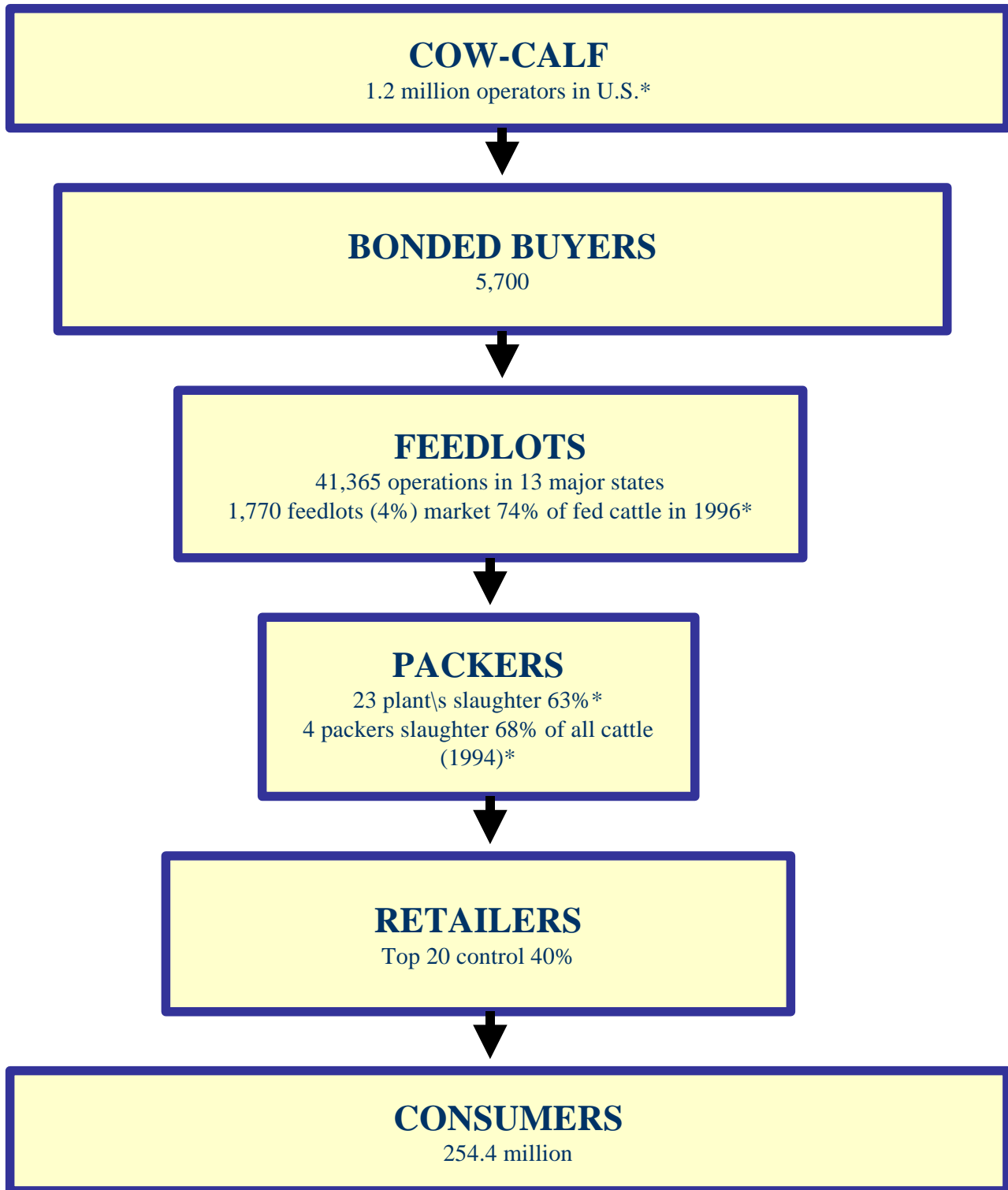
Often, the movement of products along the beef market channel is accompanied by information flows. Typical diagrams of information flows show movement in both directions, associated with each transaction. For example, cattle shipped from feedyard to slaughterhouse are accompanied by documentation of cattle numbers, weights, and genetic composition. A corresponding flow of information in the opposite direction occurs, but it may be as limited as the price received in aggregate. Such limited information flows associated with an open-market transaction help to define the spot market for a firm, but how does it help to inform long-run planning or decision-making? A more information-intensive marketing channel would be characterized by systems that provide continuous flows of information to supplement the

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<sup>1</sup> The retail sector discussed in this report is the grocery component only.

Figure 1

## THE BEEF MARKETING CHANNEL



Sources: Ernie Davis, Dept. of Agric. Econ., Texas A&M Univ., and (\*) USITC

transaction-specific information. Such information might come from other agents in the market, or from public or private information providers outside the firm. There are several ways in which information transmission might occur; examples include contracts, price premiums or discounts offered for certain quality characteristics, or studies published by outside researchers.

Figure 2 depicts the information flows along the market channel that were uncovered during the interviews conducted in this study. There was limited evidence of information sharing across levels of the market channel. For example, a large packing firm is in the process of fully incorporating electronic data interchange with its major customers, while sales representatives were used as information resources by retailers. There was evidence of the important role that private firms and associations play as information intermediaries in the cattle-beef market. Retailers collect sales information and transmit it to private companies that compile the data and sell it to the marketing staff of meat processing companies, who use it as a guide to market share and product performance. Specific data on product movements for fresh meat are not yet available. The technology to enable retail point-of-sale information for fresh meats to be collected is still evolving and not fully implemented in the grocery industry. In addition to private firms acting as information conduits, trade associations and government information providers were important in collecting and disseminating information, particularly among firms involved in the production level of the market channel.

## **SURVEY RESEARCH PROCEDURES**

This research is based on interviews with individuals working in various firms at all levels of the beef market channel. The interviewing process began with contacts by the authors and their colleagues, hence it did not provide a random sampling from the industry. The goal in compiling a set of respondents was to identify individuals who were active participants in the market, such as buyers, sellers, and brokers. None of the respondents had a primary function of management, strategic planning, or full-time research or analysis. This was a conscious plan in order to explore how these market-oriented job functions might generate different demands for information than were found among the analysts in the private sector who comprised the sample from an earlier phase of this project (Salin, Thurow, and Elmer).



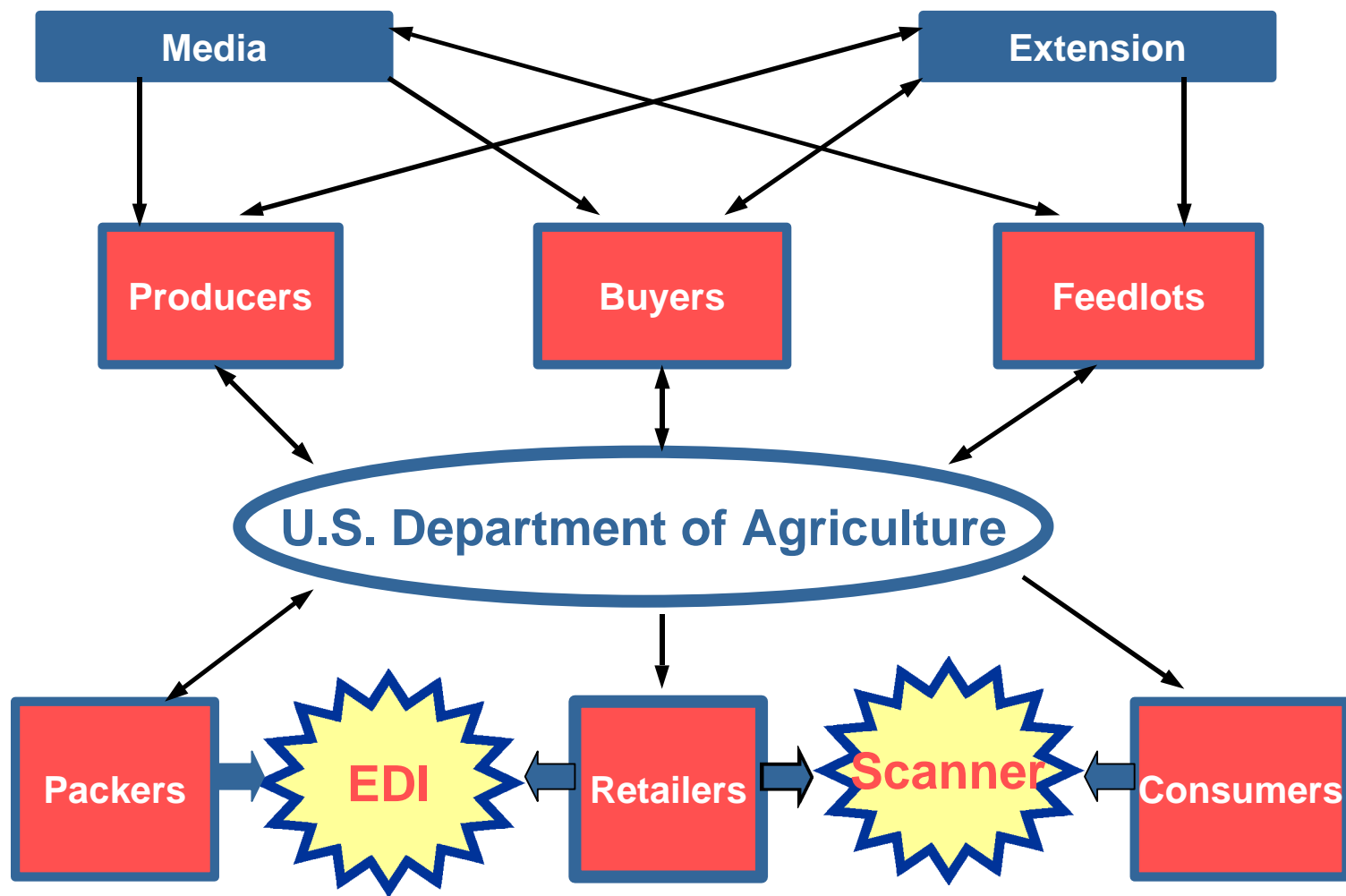


Figure 2: Information Flows in the Cattle-Beef Industry

The interviews were conducted using a questionnaire that asked respondents if they used any of several categories of information from various information providers, and inquired about management information systems within the firm. The text of the questionnaire is attached in appendix A. Pre-testing of the survey instrument was conducted with agricultural producers near the researchers' location, in June 1997.

In addition to the personal interviews with larger firms, 29 cow-calf producers responded to a short, written version of the questionnaire. These ranchers were attending an Extension Service program at Texas A&M University. A summary of the responses from the cow-calf operators is in appendix B.

The respondents who participated in this research averaged over 18.5 years of experience in their industry. Experience levels were highest among the retail industry contacts; several of these people reported that they began working at the store level and advanced within the company to buying or managerial positions. Cow-calf producers who responded to the written survey averaged 21 years experience.

Table 1. Experience Level of Respondents and Number Interviewed.

Level of Industry	Years Experience	Number Interviewed
Feedyard	18.00	3
Broker/Buyer	15.25	4
Packer	12.20	5
Retail	28.00	6

## **CONTENT AND SOURCES OF INFORMATION**

In this section, the demand for information by agribusiness employees is assessed using responses on the content of useful information products and the sources that the respondents turned to in order to meet their needs for information. The respondents were given a list of

information sources<sup>2</sup> and asked to use a Likert-type scale to rank their importance. Together, these two questions and answers provide a broad outline of the market for information in the beef cattle industry. The results are summarized in tables 2 and 3. All of the respondents used information on prices in their jobs. Market prices were of great interest to producers, feeders, and brokers. Respondents who worked in the areas of sales and buying for firms in the meat packing and retail sectors used market prices of retail cuts as a basis for negotiations or for formula pricing. Many respondents expressed concern about the reliability of publicly reported price data, because of self-reporting by the industry and the fact that forward sales are not reported.

### **Information Obtained Outside the Firm**

Respondents at all levels of the market chain used USDA information products, although retailers did not consider USDA to be an important source. The level of importance attached to USDA reports also varied among the contacts at packers, with employees involved in distribution of processed meats valuing USDA less than others working at the packer level.

Based on the titles of information sources named, many of the respondents used statistical data, particularly the inventory and price reports from the U.S. Department of Agriculture. *Cattle on Feed*, the statistical report on inventory levels released monthly by NASS, was a commonly named source among the respondents. Price series for retail meat cuts, collected daily by AMS, were also named as valuable USDA information resources.

Most of the respondents outside of the ranch level used electronic information services and considered them very important to their job performance. Cow-calf owner-operators were an exception, with about two-thirds reporting that they do not use electronic information systems.

Some variation among interviewees' responses is attributable to differences in firm size. For example, employees of a smaller retailer found trade journals to be important information sources, while the representatives of larger chains did not rely on them. Trade publications were

Table 2. Content of Information Used by Agribusiness Employees.

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<sup>2</sup> National newspapers or business magazines, trade journals, consultants' newsletters, USDA reports, electronic data and information services, Cooperative Extension Service, sales representatives, and other personal contacts.

Type of information	Information User			
	er/ Order buyer	Brok er	Pack ler	Retai
Weather	✓	✓✓	✓✓	✓
Prices	✓	✓✓	✓✓	✓✓
Production	✓	✓✓	✓✓	✓
Int'l. Trade	✓	✓	✓	✓
Consumpti	✓	✓	✓	✓
Experts	✓	✓	✓	✓
Forecasts	✓	✓	✓	✓

✓✓ All respondents used this type of information.

✓ Some respondents used this type of information.

Table 3. Importance of Information Sources Ranked by Agribusiness Employees.

Source of Information	Information User				
	Co w-calf/ dyard	Bro ker/ Orde r buyer	Pa icker	Re tailer	
Nat'l	✓	✗	✗	✗	✓
Trade Journals	✓	✓	✗	✗	✓
Consultants	✓	✓	✗	✗	✗
U.S. Department of	✓	✓	✓	✓	✗
Electronic Information	✓	✓✓	✓	✓	✓
Cooperative Extension	✓	✓	✗	✗	✗
Sales Representatives	✗	✗	✗	✗	✓
Other Personal Contacts	✓	✓✓	✓	✓	✓

✓✓ Very important.

✓ Moderately important.

✗ Not very important or did not use.

rated as important information sources by the smaller ranchers. Personal contacts in the industry were very important to producers and brokers. An indicator of the importance of external information to businesses is the amount they spend on purchased information services. The employees of medium-sized firms that were interviewed typically estimated spending in the neighborhood of \$12,000 per year on information purchases. Divisions of diversified corporations reported lower expenditures. The highest amount reported by a corporate division was \$6,000 per year; others reported far lower expenditures. This does not include the expenditures on total information staff and purchases at the corporate level.

The persons interviewed considered that both current market information and long-term outlook information were important in their work. The employees at cattle production firms and brokers conducted their own long-term analysis and used historical data on which to base their forecasts. They also used information services that incorporated analysis of patterns and cycles in production and prices. Marketing staff for meat packers used reports of yearly high and low prices of specific cuts of meat, provided by a corporate data base.

The issue of timely release of information was crucial to many respondents. Several brokers and buyers used real-time commodity exchange quote services and consulted prices throughout the day. Marketers who used prices of particular meat cuts as the basis for formula sales or negotiations relied on the USDA-Agricultural Marketing Service price information via electronic systems on a daily basis. At the retail level, scanner data, which are cleaned and aggregated by private companies, are available after a 4-week delay. Respondents differed as to whether this is sufficiently timely for their needs. Another form of short-term information that was important to many respondents was current news events, such as food safety events, and animal disease status reports.

### **Information Collected Within the Firm**

Interviews with employees of agribusinesses in the cattle-beef sector indicate that proprietary data and information are very important to agribusinesses, particularly those that are closest to the consumer in the product market channel. In the interviews, we asked explicitly about the nature and purpose of information systems within the firm (Questions 6-9). Every firm had a computerized system for production records, sales and marketing information, and

accounting information. Several respondents commented on projects under development that involve technology for sales tracking, automated ordering, and internal information networks, and on plans for investing large sums in improved information technology.

Firms at all levels of the cattle-beef marketing channel collect proprietary information, but variations in content and emphasis can be observed along the market chain. Closer to the farm, cost of production information is a strong focus. Retailers emphasize point-of-sale data collection, as well as information systems that track internal costs, plan labor schedules, and manage warehouse logistics. In the following section, a typical management information system for each level of the marketing channel is described, based on accounts from published sources. Then the responses by interviewees are reported.

**Internal Information Systems for Ranchers.** For a cow-calf production operation, the management information systems consist of a cash accounting system, business financial statements, and cattle and feed inventory and production records (McGrann, 1996). Private companies sell computerized systems that allow ranchers to track herd genetics and reproduction. Computer systems used to monitor financial performance area also are available. The National Cattlemen's Beef Association and the National Integrated Resource Management Coordinating Committee sponsored a program to develop guidelines and computerized decision aids for industry-wide performance measures known as "SPA" (Standardized Performance Analysis). The SPA system integrates production and financial information so that producers can monitor results and identify areas for change.

**Internal Information Systems at Feedyards.** Information systems at cattle feeding companies often include electronic scanners providing personalized data on each animal. Escalating input costs, competitive pressures and increased consumer demand for specialty meat cuts are prompting producers to invest in electronic information systems. The high investment cost of such technology is offset by the gains in improved internal accounting records and increased scope of medical/genetic information available for each animal; in sum, the technological investment facilitates managerial decision-making. (Murphy, 1997).

**Internal Information Systems at Packers/Processors.** Meat packers are considering electronic scanning techniques to ensure greater accuracy in the evaluation of meat cuts.

Instrument assessment technology has not yet been widely adopted, but it is expected to improve carcass evaluation at the plant, paving the way for payments to suppliers that are based on individual carcass quality characteristics (Grant). To date, such technology is in the testing phase at U.S. packing plants.

**Internal Information Systems at Retail.** Case studies of Frito Lay, Inc. and H.E. Butt Grocery Company are two specific examples of retailers who have invested heavily in information systems (Harvard Business School). In the case of Frito Lay, the company underwent an entire technological restructuring to link managerial decisions with local market dynamics, using hand-held computers and data entry by the sales force. The two critical characteristics Frito Lay identified in an information system were first, an ability to analyze/interpret data, as opposed to simple compilation, and second, an ability to interface each departments' contribution to information analysis with one another. H.E. Butt Grocery Company invested in an information system which would help them compete with mass merchandisers and store clubs. The company led the industry in implementing the efficient consumer response (ECR) strategy, in which manufacturers, retailers and wholesalers use advanced technology and inter-firm linkages to streamline grocery channel operations. Inventory levels were reduced as part of a "continuous replenishment" program, ordering from the largest suppliers was automated, and category management replaced traditional buying activities.

**Proprietary Information in the Cattle-Beef Sector.** The personal interviews reinforced some concepts about the importance of information systems to agribusinesses as described in the publicly-available literature. One major barrier to the full use of information systems to improve the efficiency of the beef marketing channel is the lack of scanner systems that provide sufficient detail about fresh meats. Meat buyers at retailers expressed the need for a system that communicates between the scale and the computer. It is difficult to obtain an accurate cost record of meat as it is transformed from primal cuts (boxed beef) into the retail packages, incorporating various cuts, non-uniform size retail packages, and quantity discounts. There was a fairly wide variation among retailers in the level of adoption of information technology applicable to fresh meat. The role of the National Cattlemen's Beef Association in assisting in coordination of technology adoption at retail is described later in this paper (see page 15).

**Resources Spent on Internal Information Systems.** During the personal interviews, industry sources were asked: “What percent of your current overall budget is devoted to internal data and information services and management systems?” Not surprisingly, this question was difficult to answer, yet an idea of the relative importance of internal information systems can be obtained from the answers. Some firms did not respond due to confidentiality concerns, and others lacked the knowledge to separate out the costs of information from other activities. The responses covered a wide range, with most “best guesses” in the range of 15%-25% of budget spent on proprietary information.

Respondents who worked for a small division of a large corporation reported lower information-related costs (5%-6% of budget). A retail chain reported total costs of the management information system at approximately 75% of sales.

### **Information and Decision making**

In an effort to assess how information is used for decision making, we asked about the most important issue facing the firm during the previous year, and what information was needed to address that issue. Respondents involved in production, trading, and processing mentioned the drought, and the resulting price and quantity variability for cattle and feed ingredients. This issue underscores the need for information about agricultural commodity markets in agribusiness operations.

Several respondents mentioned the need for better information and transmission of information within their company. Improved proprietary information would help their firm react more quickly to the market. The parameters of the relevant market changed dramatically for respondents who worked with meats, compared with the cattle sector. Persons involved with marketing to retail, and retail buyers, wanted better information about movement of specific products so they could target their marketing support efforts appropriately. Another type of information considered to be useful involves assessing the competition, from other stores or from exporting companies. A final area of information that was suggested for the most important issue facing the business would result from research on customers at the retail level. There is disagreement about the shares of demand, and the type of product demanded, for the growing restaurant segment of consumption. A better understanding of trends and customer demographics



was mentioned as needed by respondents at all levels of the market chain. Some companies would find regional specificity in analysis of consumer demand to be useful.

### **Trade Associations as Information Providers**

Three trade associations provide information-related services to the cattle industry: Cattle-Fax, National Cattlemen's Beef Association, and Texas Cattle Feeder's Association. Their clientele is cattle producers and feeding companies.

**Cattle-Fax** is a member-owned, member-directed information and analysis organization serving cattle operators in all segments of the industry. A subsidiary, CF Resources, provides research services, educational programs and economic data for agribusiness companies serving the cattle industry.

Members of Cattle-Fax must be bona-fide cattle producers, and the membership includes cow-calf producers, stocker operators and feedlots. All members receive a weekly *Update* newsletter, which includes a wide variety of cattle supply, beef production, and price information for all regions of the country, as well as detailed market forecasts and feature articles for all classes of cattle, competing meats, and feedgrains. Full-service members have access to an analyst who covers the market, weather, and range conditions and all other pertinent events in their geographic region.

Most feedlot members of Cattle-Fax report on-feed inventory, placement, and shipment information to Cattle-Fax staff, who in turn use this feedlot database as a primary means of projecting fed-cattle supplies and prices. The number of cattle on feed tracked by the Cattle-Fax database currently totals nearly 4.5 million head.

Cattle-Fax, in partnership with the National Cattlemen's Beef Association, developed and maintains a Meat Featuring Analysis Program (MFAP) which monitors the retail meat featuring activity of more than 60 grocery chains and 1,700 retail stores nationwide. Featuring data is collected and provided by an outside company, and includes detailed advertising information such as price, cut, and grade. Cattle-Fax analysts use the MFAP to better understand and anticipate how changes in retail featuring activity affect product prices and, ultimately, live cattle prices.

The **National Cattlemen's Beef Association** (NCBA) sponsors a Value-Based Marketing program that has the goal of understanding the contribution of each level of the marketing channel to the value of beef products. As part of that program, NCBA developed the Value-Based Meat Management program to develop product identification codes and train retail personnel in the implementation of the Uniform Meat Identity Standards. NCBA works with the Uniform Code Council to develop standard nomenclature for beef, pork, lamb, and veal products, assign a UPC number, and eventually allow for clean, accurate scanner data for sales of fresh meats. NCBA obtains some sales data from retail companies who work with their program. NCBA also has a partnership with IRI (one of the two major companies who purchase and re-sell retail scanner data) to obtain industry-level scanner data on red meats in exchange for promoting the industry-wide conversion to a uniform set of codes.

**Texas Cattle Feeders Association** collects market information from its members and supplies information on market conditions to its members. TCFA members are cattle feedyards in Texas, New Mexico, and Oklahoma and represent about 30% of the total fed cattle production in the U.S. TCFA members report sales quantities and prices to the association daily, using an electronic, modem-based satellite system designed and installed by TCFA at approximately 150 feedyard locations. TCFA members obtain the data through the satellite system but it is not otherwise released until publication of the weekly Newsletter on Friday.

The activities of the industry associations indicate that the farm-feedlot level of the cattle-beef sector devotes considerable organizational resources to information collection, analysis, and dissemination to ranchers and feedyards. These activities suggest that there is a strong need for statistics and analysis, and that industry groups participate in filling those needs. There are several relevant issues to consider regarding the role of trade associations as information providers. First, the cost of access to information services may be a barrier to the smallest producers receiving the information. A second issue is the reputation for reliability of private providers, in contrast to the reputation of the government. Finally, the question of duplication or complementarity of private associations' information products should be addressed. In particular, do the analysts who work for the trade groups rely on data from government, or vice versa, or are their respective information products differentiated so that both are valued by the industry.

### **Role of Extension in Information Collection, Dissemination, and Analysis**

A small percentage of the persons interviewed used the Cooperative Extension Service as an information source. These persons represented large firms at the cow-calf and feedlot levels, with an exception of one person in a management position with a packer. None of the persons interviewed considered Extension to be a very important source of information. In contrast, the cow-calf owner-operators felt that Cooperative Extension was very important.

The multi-state Livestock Market Information Center (LMIC) is a major information provider in the cattle-beef sector. LMIC was established by Cooperative Extension in several Western states and serves extension personnel who are responsible for livestock marketing. The LMIC staff conduct forecasts and analyses that focus on market fundamentals. They also conduct industry outlook meetings and compile historical data.

There were three ways in which government analysts at the U.S.D.A. Economic Research Service add value to raw statistics that are considered important by other industry analysts.

- 1 Trade data conversions from Customs units to carcass weight equivalent units that are compatible with domestic supply and use figures.
- 2 Retail price data conversions, for the Bureau of Labor Statistics series on meat cuts. This series is crucial for estimation of price spreads on a per hundred-weight basis.
- 3 Reporting of carry-over levels, such as cold storage data, converted to carcass equivalent units.

There are similar types of data conversions that ERS conducts on the grain side that are important for cost of production analysis in the cattle industry.

## **CONCLUSIONS AND IMPLICATIONS**

Information is both demanded and provided by firms in the cattle-beef marketing channel. Most firms are aware of the importance of up-to-date management information systems and are devoting considerable resources to their information capability. An issue that needs to be addressed in the future is: How can a collection of independent management information systems at firms be transformed into a true “value-added chain,” in which information is shared in two-

way patterns? Through interviews with employees at agribusinesses, we found limited evidence of information sharing. Several factors may limit the extension of information-based alliances in the beef industry, including the costs of the systems and the difficulty of establishing trust and long-term relationships in the sector. Currently, features associated with the character of the fresh meat product are a barrier to the development of retail scanner-based information capability. Because of the efforts of firms and industry associations, it may not be long before an information system in the spirit of “efficient response” would ensure that consumer desires, as made visible by buying decisions at retail, could be transmitted rapidly to producers. But this is not feasible with the systems operational at most retailers.

Information about commodity markets is essential to firms that produce and trade cattle and process beef. The employees at many of these companies use information on cattle inventories and prices provided by the U.S. Department of Agriculture. The titles named as important by the interviewees were statistical products. Most respondents used electronic information services to access the information, which suggests that efforts to use technology to disseminate the information are welcome among the industry.

An industry-wide concern about the reliability of the price statistics that are reported to USDA is apparent. The reliability issue is linked to economic concentration of the sector and the nature of the data collection process.

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**APPENDIX A**  
**SURVEY OF AGRIBUSINESS INFORMATION USERS**

Name\_\_\_\_\_

Company\_\_\_\_\_

Type of Business  
\_\_\_\_\_

To interviewee:

We are doing this study to learn more about the information that is valuable to agri-business decision-makers today. The results will help us in universities and in the government agencies responsible for collecting and analyzing agricultural market data to decide how best to use the public resources in providing information services.

First, let me assure you that your responses will be treated in a confidential way. The results will be reported in a way that does not identify you or your company.

Now let's turn to the questionnaire. As we proceed through this interview, we are interested in both your sources of data and information. By data, we mean statistics. By information, we mean data with value added to it such as analysis, interpretation, description or forecasts. Please indicate whether your response is regarding data or information.

**Personal interview script:**

1. Please indicate the type of information you access **frequently**. Please indicate all that apply:

_____Weather	sometimes
_____Prices	sometimes
_____Production	sometimes
_____International trade (imports or exports)	sometimes
_____Consumption	sometimes
_____Experts' opinions and commentary	sometimes
_____Forecasts and commodity outlook reports	sometimes

Other\_\_\_\_\_

2. Now, I am going to ask about information that you collect from **outside** the firm. Let me list several types of information sources. Please tell me if you used these during the last 6 months. Also, if you used a source, please evaluate how important this information source is to your job performance: Not very important, Moderately important or Very important.

	Used	Did Not Use	Not	Mod.	Very	
a. National newspapers or business magazines	_____	_____	_____	_____	_____	a.
b. Trade journals or trade newsletters	_____	_____	_____	_____	_____	b.
c. Consultants' newsletters	_____	_____	_____	_____	_____	c.
d. Department of Agriculture reports	_____	_____	_____	_____	_____	d.
e. Electronic data and information services	_____	_____	_____	_____	_____	e.
f. Cooperative Extension service - newsletters, publications, meetings	_____	_____	_____	_____	_____	f.
g. Sales representatives	_____	_____	_____	_____	_____	g.
h. Other personal contacts	_____	_____	_____	_____	_____	h.
iv. Other _____						

On the sources that you indicated that were very important, I would like to know if you used the sources for the following: Please indicate all that apply.

	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>
Buying inputs	_____	_____	_____	_____	_____	_____
Marketing / Sales	_____	_____	_____	_____	_____	_____
Forecasting	_____	_____	_____	_____	_____	_____
Strategic Planning	_____	_____	_____	_____	_____	_____
Other _____	_____	_____	_____	_____	_____	_____

3. Would you say that you use more **current/near-term** information on agricultural markets, or more **intermediate/long-term** market outlook information? (Or both?)
4. What features of the information services that you buy make them useful for decision-making?
5. How much was spent for data and information services purchased from outside sources during 1996?

FOR RETAIL ONLY

5a.. Please tell me about the way in which the sales and scanner data are distributed to other employees who need it to perform their jobs.

Do you have any employees who analyze this information?

**Now I would like to ask about data and information collected *inside* your company. We are interested in all types of information or record-keeping, such as accounting, marketing, and production. Let's discuss several types of information systems separately.**

6. First, the Production Record-keeping system.

(Output levels, weight gain, cost of inputs, yield or efficiency measures)

- a. Is the system computerized?
- b. How are the employees trained to use and maintain the system?
- c. How is the information used for decision-making?

7. Second, the Marketing Information system.

(Prices, futures, point of sales data, promotion or advertising expend.)

- a. Is the system computerized?
- a. How are the employees trained to use and maintain the system?
- c. How is the information used for decision-making?

8. Third, the Accounting Information system.

(AR, AP, Billing)

- a. Is the system computerized?
- b. How are the employees trained to use and maintain the system?
- c. How is the information used for decision-making?

9. Approximately what ***percent*** of your current overall budget is devoted to **INTERNAL** data and information services and management systems?

**(technical personnel, MIS, equipment and services)**

10. I would like you to think about the most important issue facing your business last year.

What information was needed to address that issue?

Is there other specific information that would have helped you?

11. What is your job title and responsibilities?

12. How many years experience do you have in this industry?



## APPENDIX B

### Cow-Calf Sector: Results of Short Survey

Twenty-nine cow-calf producers who attended the Texas A&M Beef Cattle Short Course on August 11-12, 1997 responded to a short questionnaire about information sources and uses.<sup>3</sup> Two of the respondents were owner-operators of large herds (over 2,000 head and 3,000 head, respectively). Sixteen respondents were from ranches of 70 - 750 head. These 18 respondents are referred to below as “larger” operations. The remaining 11 responses were from operations of 50 head or fewer, and comprise the group referred to as “smaller” operators. The differences in information sources and uses between the larger and smaller ranches are highlighted, when they occurred.

#### Types of Information Used

**Weather:** Ninety percent of the ranchers used information on the weather. All of the small operations consulted weather information and 3 of the 18 large operators did not.

**Prices:** Only one producer did not use price information. Ranchers mentioned that local sales prices at auctions, or reported on radio or TV, were used, in addition to futures and spot prices from national markets.

**Production:** Information on production was consulted more often by larger ranches than those operating smaller herds (78% of large ranches versus 64% of small). USDA's Cattle on Feed was a production report named specifically by several respondents.

**Forecasts and commodity outlook reports:** Slightly more than two-thirds of the ranchers used forecasts and outlook reports. The frequency of use was higher for larger operations (72% versus 64%).

**Experts opinions and commentary:** Just under two-thirds of the ranchers used experts opinions.

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<sup>3</sup> The questionnaire included the first two questions from the text used in the personal interviews (in Appendix A), and an additional open-ended question that asked for names of information sources that are “particularly useful.”

## Sources of Information

Trade publications were consulted by 94% of the larger ranch operators. They were an important information source: 38% ranked trade publications as "very important" on the Likert-type scale, and another 50% ranked them as "moderately important." The respondents from smaller ranches reported a lower frequency of use (72%) but relatively stronger value. Six of the 8 respondents who used trade publications found them "very important" and the other two rated them "moderately important." Trade publications were of roughly equal value in both short-term decisions (marketing and purchasing), and in the longer-term activities (forecasting and strategic planning).

The respondents at the cow-calf level described in this section were surveyed at a Cooperative Extension program, so all of their respondents used Extension as a source of market information. The two respondents from the largest operations (over 2,000 head) ranked Extension information as "moderately important." Among the remaining larger producers and smaller producers, half of those surveyed ranked Extension as "very important" and half ranked it "moderately important." The producers running larger operations used Extension information for buying and marketing activities and for forecasting and planning, in about equal weights. The uses for Extension information among smaller ranches were predominantly for long-term decisions (forecasts and strategic planning).

USDA information was used by 72% of the cow-calf operators surveyed. A higher share of the smaller ranches consulted USDA, compared with the larger ranches (82% versus 67%). The two largest ranch operators did not consider USDA information to be important. Among the larger ranch subsample, one-third of those who used USDA ranked it "very important," while most of the remaining users ranked it "moderately important." The most frequently cited use for USDA information in this group was forecasting. Nearly all of the small ranch respondents ranked USDA information "moderately important," but did not identify a use.

Electronic data and information services were consulted by fewer than one-third of the respondents at cow-calf operations (31%). At the larger ranches, one-third used electronic services but half of those using electronic services considered them "very important." Two respondents used electronic information services in both their purchasing and their marketing activities.

## **APPENDIX C**

### **ADDITIONAL INFORMATION NEEDS**

In response to several questions we asked we found the respondents would often like additional or more timely information.

Brokers indicated a need for foreign weather and acreage data such as yearly production in other countries, by location and specific area, and other such data that is collected via satellite.

At the feedlot level, respondents desired archived or historical USDA information that could be easily downloaded into a spreadsheet. Better price information and accurate price forecasts were also listed as desired information products.

Packers indicated that there were problems in the accuracy of USDA close data, particularly with respect to hogs. The reason is self-reporting by the packing industry. Usually, there is not full representation on the market. Pork is often formula priced off these questionable USDA close estimates.

Retailers indicated a variety of information needs. Export demand information needs included obtaining the information sooner and in more specific detail. A three-month lag is too long to be used effectively, according to a grocery chain representative. They also indicated that knowing that meat exports are up is not enough information to be useful. They would prefer to see information by cuts such as ribs or loins. They indicated a need to have more global information such as seafood production, exchange rates and monetary effects, global demand and other general information that impacts the supply and demand for meat. Issues such as ‘Has Argentina overcome hoof and mouth disease?’ is an example of the information needs perceived by the retail level.

Retailers said it was difficult to clearly identify target markets and the demand in each segment with current available information about meat. They indicated a need for estimates of volume by segments in the market such as restaurants, etc. and by type of meat such as ground beef, steaks, roasts, etc. Ground beef is of particular importance since it is heavily influenced by the demand for fast food. One problem retailers identified was that signals to the production level are skewed by steak buyers which is a small part of the market. They said the production

level is listening only to steak demand needs which represents only 10 percent of the market. Highly marbled meat is needed for steaks but demand for cuts from the rest of the carcass may require a lower amount of fat. This indicates a need to know what is really sold in each segment of the market so that signals to production are not driven by high-value restaurants or other small segments of the total market.

The retail level also uses a significant amount of technological equipment. Staying close to current technology is difficult and they often fall behind right away. There is a constant need to replace technology. Often times older computers and systems can't handle new software and need to be upgraded.

Associations also indicated information needs. Better information concerning demand particularly product flow for beef in different segments of the market such as for pet food, retail, institutional, HRI, etc. They indicated that information such as the Broiler industry provides for poultry is needed for beef. They want information better than the Blue sheet which is based on wholesale price to know who is paying for what and why. This would aid in the understanding of the product flow. Timely export information was also an expressed need. Trade data in the meat industry is not very helpful in the present form. One association indicated they would like more frequent than quarterly information on hogs in areas such as breeding herds, farrowing and such. World Board reports should break out grain use for feed.