

COMPUTER SELLING OF SHEEP AND CATTLE

INTRODUCTION

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Computer selling of stock is a system of selling animals by description using a computer to communicate between vendors, buyers and agents. In the more advanced systems the computer conducts an auction, and undertakes many of the accounting functions of the market. Such a system offers the potential to revolutionise the marketing of livestock. Despite this, progress around the world has been relatively slow with a number of resounding failures along the way. In the United States a number of attempts have been made to sell sheep and cattle by computer. A notable commercial failure was the Cattlex System based in Texas while one of the few successes was the Eastern Electronic Marketing Association system for selling lambs based in Virginia.

In Australia a computer auction system for cattle and lambs has been conducted since February 1982 at the University of New England. This system is run by New England Livestock Computer Marketing Pty. Ltd. (NELCM). This system was developed and is being trialled for the Australian Meat Research Committee. The system at this stage has demonstrated the potential for computer livestock selling, however the trial system sold about six million dollars worth of livestock in 20 months. At the time of writing (September, 1983) a team from the Agricultural Business Research Institute is preparing a feasibility report assessing the potential for an Australian-wide computer livestock selling system for sheep and cattle (fats and stores). A national system could overcome many of the deficiencies in the existing NELCM system.

This contract describes present computer livestock selling systems for sheep and cattle, and discusses their potential.

PRESENT DEVELOPMENTS IN AUSTRALIA OF SALE BY DESCRIPTION SYSTEMS

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A number of sale by description systems in use in Australia do not use computers, but have the potential to be computerised and therefore warrant consideration. The following summary of such alternative systems is based on a report compiled in August, 1983 by the AMLC sub-committee on Livestock Marketing, and a report prepared by P. A. Rickards as background for the national feasibility study mentioned above.

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(i) Telstock Telstock is a telephone-based livestock marketing service which was introduced by Westfarmers in Western Australia in 1977. Producers describe their stock, which are sold by Westfarmers to processors on a cents/kg dressed weight basis with 3 per cent shrink. Ownership changes at the point of carcass weighing. Westfarmers charge 3 per cent commission for this service instead of their normal 5 per cent on live animal auction sales. This reduction reflects the lower costs of selling this way.

(ii) Livestock Link This telephone-based system was introduced in October, 1981 by Farmers Grazcos Co-operative Ltd. (FGC) and covers the sale of beef, veal, sheep and lambs. The producer may assess his own stock or have this done by FGC personnel. The scheme collects a pool of bids from processors and matches processor's requirements and prices to the producer's specifications of his stock. There is a pre-slaughter inspection by the processor to ensure that producer specifications match his requirements and adjustments or re-negotiation can occur. Selling costs are considerably lower than with live animal auction sales.

(iii) Auction sale by description The Queensland Meat Industry Organisation and Marketing Authority has developed specifications for a system of selling cattle on the basis of classification. After assessment by the producer, the lot is allocated to weight classes. Buyers would be expected to bid against the various weight classes with the highest total bid winning.

(iv) Trading cattle by carcass specification This is simply a form of direct selling based on producer description and the eventual pricing of carcasses based on classification parameters. Price schedules are drawn up by the processor in response to his requirements. The price grid (weight/fatness) is available to producers on request, who can then take advantage of this price schedule if acceptable.

(v) Lamb auction by description The N.S.W. and S.A. Livestock Marketing Study Groups have run trial auctions by description. The producer describes the lambs and passes the information to his agent who then passes it on to the sale centre, where a catalogue is prepared. An auction is conducted at the sale centre from the information contained in the catalogue with buyers present. After the sale the agent passes details of the auction back to the producer along with delivery instructions. The lambs are delivered direct to the abattoirs. After slaughter the kill information and payment is passed back to the agent who then checks any price adjustment and forwards the information and payment to the producer. Discounts for misdescription are involved and are based on the carcass description (weight/fatness).

(vi) Tasmanian Livestock Exchange The Tasmanian Livestock Exchange is a company formed jointly by the two major agency firms in Tasmania, namely, Websters Ltd. and Roberts, Steward Ltd. It has been selling cattle by description since July, 1983 and it is planned that the procedures will later flow over into sheep and lamb marketing. The basis of the sale is:

- Stock agents assess livestock on farm
- The sale is held at saleyards following normal auction sale but the stock are still on farm
- Cattle are sold cents/kg liveweight
- Producer can nominate delivery day
- Buyer arranges delivery and nominates delivery point
- At delivery point the buyer inspects the consignment and accepts/rejects them. If accepted they are then weighed and the producer is paid on this weight. Change of ownership occurs at this point
- If the cattle are rejected the agent and the buyer negotiate. If there is no result from this negotiation the agent must take delivery of the cattle and pay the vendor the stated sale price

(vii) Vis-Stock This is a system suitable for use with any type of livestock. Using a video camera the producer or his agent film in colour all the stock he has for sale. Vis-stock collects, develops and sends films to interested agents for showing to potential buyers. The films are 'voiced over' by Vis-stock giving a full description and each segment is catalogued allowing potential buyers to select the particular pieces of information that interest them. Thus, it is basically a service to bring producers and buyers together - not a selling system in itself. Price negotiation is directly between buyer and seller.

(viii) Livestock Classification Sales In July 1983, Elder Smith-Goldsbrough Mort launched their "Livestock Classification Sales" scheme covering sheep, cattle and pigs. To operate the scheme, Elders undertake to obtain prices in cents per kg dressed weight from participating meatworks for each section of their fat/weight schedules. The best prices for each section are then communicated to each capital city office and in turn to branch offices for quoting on to clients. A Videotex based information system is used to assist in the rapid dissemination of the price grid. Stock are inspected by Elders assessors and classified live according to Elders schedule. Following slaughter the abattoir classifies the carcasses on the same schedule and the client receives the classification details with his account sales.

#### NEW ENGLAND LIVESTOCK COMPUTER MARKETING (NELCM)

NELCM is a company formed to offer cattle and lambs for sale by computerised auction. It provides a means of field testing the electronic selling system developed for the Australian Meat Research Committee. Stock are weighed on-farm by independent professional assessors who also score them for fat, estimate dressing percentages and (in the case of lambs) describe the fleece. Assessment details are entered into the market computer which broadcasts a catalogue of stock available to interested buyers using the telex network. Stock are then auctioned by the computer with buyers having the option to bid 'on-line' via telex-to-computer links, or 'off-line' by giving the computer a limit bid at the start of the auction. The vendor is able to set a reserve price below which stock will not be sold, thus protecting him from market price fluctuations. Historically the assessments have been performed by independent assessors with no adjustment to price for inaccuracies in description. Procedures for agent and vendor assessors are under consideration at the time of writing.

The advantages of the NELCM system are:

- Maximises buyer participation
- Livestock do not leave the property until sold thus minimising the costs prior to sale
- Because of the level of auction competition, the potential for price maximisation is increased
- The ability for producers to set reserves minimises the down-side risk of striking a poor market
- Farmer is paid on what he actually produces
- National potential exists.

The disadvantages are:

- The use of independent assessors introduces a cost element
- In extensively-managed systems it would not be practicable to muster and weigh stock prior to offering them for sale
- Local butcher participation could be reduced
- The system is not well suited to handling small lots
- As the catalogue size increases, the use of telexes as bidding terminals will become a limitation.

#### COMPUTER LIVESTOCK AUCTION SELLING SYSTEM (CLASS)

A computerised auction sale for cattle is being trialled for a year by the W.A. Department of Agriculture on behalf of the Rural and Allied Industries Council. The existing NELCM software has been installed to run the sale, but additional software is being written to handle the sale of producer-assessed or agent-assessed cattle on the basis of their classification on the slaughter floor. The scheme has all the advantages cited above for the NELCM system, and the sale-by-classification option should overcome the disadvantages associated with the cost of assessment and its problems in extensively-managed situations.

Most of these systems have two common features, namely, values are known before the stock leave the farm, and direct delivery to slaughter with minimum bruising and freight. The NELCM and CLASS systems offer auction-determined prices combined with maximum flexibility for buyer access. The future of such computer based systems offer considerably more, with a prospect of joint use of a national computer sale venue by most of the present sale by description systems.

#### AN AGENT'S ASSESSMENT OF COMPUTER LIVESTOCK SELLING

KEN SKEEN\*

Any assessment of the effect of computer selling must be preliminary at this stage as most systems operating in Australia and elsewhere in the world are either in the research and development stage, or are embryonic commercial operations. Thus to date, most agents in Australia have had an association or involvement with computer livestock selling systems, rather than direct operation and control of these. Agents have studied systems operating elsewhere, have co-operated in research, and have developed contingency plans for involvement in the implementation of computer livestock selling, either independently, in consortiums, or as industry groups.

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The involvement of agents has led to the conclusion that electronic marketing does have a future in Australia either in a computer assisted or computerised trading form. This is because marketing costs are rising for all participants, hence the need for alternatives. Computer systems offer an alternative means of price discovery and a method of creating efficiency in the marketing process. The participants in the trading system are still the same - producers, agents, buyers - the major difference being that in an electronic market buyers and sellers are not physically present. They enter the market and engage negotiations through remote communications, with the computer managing the interface.

Accurate, reliable and consistent description of livestock is now possible and this enhances the viability of any electronic marketing system. Obviously it is cheaper to transmit descriptions electronically than to move the physical product to a central point for examination or to travel from one production point to another to examine the product. The benefits of electronic marketing will come in the form of improved price performance, greater competition from the exposure to a wider net of buyers, the possibility of lower transport costs, the improved accuracy of marketing information and greater access to that information by a wider section of the industry. Overall, the major advantage of electronic marketing is to combine the efficiency of direct marketing with the increased price competition of a large public market. There will be costs involved in the introduction of any electronic marketing system in addition to cost in its development and implementation. There will be displacement costs because traditional systems, facilities and institutions are going to be redundant to some extent. There will also be some extra cost from old and new systems running in tandem for some years.

Experience with electronic systems has provided guidelines which must be adopted if they are to fully reach their potential and the needs of both buyers and sellers are accommodated. The system must be innovative, allow easy access, cause minimum disruption to existing systems and trading practices, and should immediately be able to attract sufficient volume to be viable. It must be developed with the involved participants and institutions and not for them, and there must be attention to educating buyers, sellers and institutions. Simplicity and cost effectiveness are essential, as are performance guarantees. Electronic systems will not sell themselves, nor can we expect them to be instantly successful.

As far as the individual agent is concerned, there should be a continuing role to play, although it may well change considerably from the traditional role. Electronic marketing does not jeopardise the future of small agents. They will have as much power as anyone else in the system. As has always been the case, the agent providing the service in demand by the majority of clients will tend to be the most successful. Some physical resources will become redundant, but this will depend on the extent of the reduction in the volume of throughput at rural selling centres and the impact on **saleyard** selling schedules, which are still the bread and butter of most agents.

The majority of producers will not have a direct link to the computer, whether it be a local, regional State or national selling system, and whether it be commercially or Government operated. Agents may well provide this link. Grading and description must be accurate, numbers delivered must be right, weight ranges must be as specified, uniformity must be reasonable, and contract delivery times must be adhered to. In other words, co-ordination of the selling function will remain vital and agents can continue to play their traditional role in this respect and in negotiating and scheduling transport.

On delivery to the abattoir, or in the case of store stock to the paddock 'or feedlot, some monitoring of delivery procedures may also be undertaken by agents to protect their client's interests. Some livestock will continue to be sold outside the electronic system - less than truckload lots, mixed lots, lots offered by people who prefer the **saleyard** system; agents will still retain this role.

Although it has often been argued that computers depersonalise the traditional selling process, electronic marketing is expected to reduce the time involved in the entire marketing process hence freeing agents to concentrate on other tasks with their clientele, adding weight to their association and increasing their liaison. They will continue to be actively engaged in loaning funds to producers and as the livestock lienholder, will have a direct interest in any sales which may eventuate. They will also continue to provide the **del credere** risks in livestock transactions, even though there will be a tendency for marketing authorities to offer credit insurance to vendors. A 'fee for service' oriented commission rate procedure may be offered by some agents, but commission will remain a feature of all producer-agent sales transactions and as long as producer-agent sales transactions and will exist as long as services and functions are performed. Just as there are variations in commissions charged today, there will be variations in the future. Although agents will function more as 'facilitators' their role will remain vital to the success of sales transactions.

There may well be some initial emotional over-reaction to the adjustment involved in changing from a traditional to a technologically modern system. However, this should be offset by the convenience and immediacy of the new system, the speed of transactions, the **computerisation** of accounting procedures, and the reduction in the potential for lot splitting and take-it-in-turn purchases. With the ability to monitor the system there is immediate availability of sale confirmation details, and instantaneous access by all participants in the system to individual sale centre prices, regional prices, state **prices**, and national prices. In addition price comparisons, (e.g. between current and previous prices) will be available for each class of stock, and price trends. Thus the participants will have the benefits of analysing and interpreting data and using it for planning and decision making.

If electronic marketing is to succeed in Australia, there must be a need for it; it must provide an opportunity to cut costs and/or improve the income of buyers and sellers; technology must be available to stimulate its adoption; there must be a competitive environment; and there must be a vehicle(s) which act as both the catalyst for change and/or which manages the electronic marketing system. The new technology is a management tool that should be manipulated to suit the user and not manipulate its user.

There is an old saying that unless something is broken down, it should not be fixed. The **saleyard** system has not broken down, but there is general agreement that it is in need of improvement. Computer technology provides the means to that end.

#### A PRODUCER'S ASSESSMENT OF COMPUTER LIVESTOCK SELLING

P.D.A. WRIGHT\*

The use of computers in livestock selling has been of great interest to me for many years. I was particularly impressed by the use of computers in livestock selling in Canada. This prompted my preparation of a report to the then Australian Meat Board on the Alberta Hog Auction system in 1970. This was followed in 1977 by my formation, with the help of fellow cattle producers, of the New England Marketing Group for the purpose of allowing voluntary supply control in addition to obtaining economies of scale in marketing. This group aimed to improve marketing of cattle in general and was the catalyst behind the formation of New England Livestock Computer Marketing Pty. Ltd. (NELCM).

The NELCM computer market, with its derivative CLASS, is the only computer based, sale by description, auction selling system for sheep and cattle in Australia. As a member of the Australian Meat Research Committee, which funded the research component of this market, I have been closely involved in the development of this market. As a cattle producer I have made considerable use of it as a marketing outlet for my own stock and have great confidence in the potential benefits of the concept. At the time of writing the NELCM market has sold in excess of 20,000 cattle as well as running a successful series of trial sales handling 16,000 lambs.

Recently vendors in the NELCM market were surveyed to determine their reaction to this market as an outlet for their cattle. The major advantages listed by these vendors were:

- Stock remain on property until sold
- Stress and bruising of stock is minimised via reduced handling and direct delivery of stock from farm to abattoirs
- More competition
- Cheaper market
- Voluntary supply management
- Great potential for the establishment of a data bank for industry benefit.

In terms of \$/head advantage or disadvantage of the NELCM market compared with traditional outlets to these vendors, the average result was a gain of \$10 per head from using the NELCM system. This suggests total benefits to vendors in excess of \$200,000 in 18 months, which is a large return on development costs with further benefits still to come.

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While vendors were obviously on the whole pleased with the system a number of disadvantages were listed and included:

- Need for large lot size
- Need for lines of cattle
- Credit risk
- Costs of market
- Time delay in payment
- Lack of specific role or livestock agents.

Some of these disadvantages can be overcome quickly. For example, this market has already responded to the credit risk problem by introducing credit insurance. Other problems will not be overcome so readily. It should be remembered that the NELCM market is the first of its type in Australia designed to fit a particular set of circumstances. Thus it is not necessarily perfect but it does demonstrate the potential of computer livestock selling.

#### ASSESSMENT OF THE NEEDS OF AN IDEAL COMPUTER LIVESTOCK MARKET

I would like to suggest some refinements to the NELCM model which could assist in reaching the goal of an ideal computer livestock market. The NELCM system relies on NELCM accredited assessors describing stock for sale. Buyers support this approach to the extent that the price bid is the price paid, with no adjustment to price for misdescription. The latter point is a significant advantage but is expensive to obtain. The ideal system should offer the ability for vendors to avoid pre-sale assessment if they wish. A description could be made by the producer and bid on by buyers, subject to post sale adjustment to price, with quality at works being independently determined (e.g. carcass classification). Potential penalties or bonuses for misdescription could be determined on a weight and grade basis by each processor and known prior to the auction. This would immediately halve the cost of the NELCM system and also provide a role for livestock agents. Agents could assist where necessary in the assessment of stock for producers as well as provide many other services, as outlined by Mr. Skeen.

The NELCM market is a regional market and therefore not known to 'foreign' operators. This could be overcome in a national system open to all to use. With the support of all parties, such a system could also benefit from economies of scale, thus further reducing costs.

A further major problem with the NELCM market is that it does not cater for small lot sizes, which therefore excludes the small producer. Further, because of the absence of small lots in this market it excludes the buying support from small butchers. The way to overcome both problems may be to allow saleyards access to the system. Saleyards are very efficient centres for 'lot building'. If stock were assessed on delivery to the saleyards and these descriptions sent to operators, say overnight, the computer could introduce buyers, not present at the saleyards, to bid against those who are present. This would allow small operators and small producers as well as saleyards access to a computer livestock selling scheme. This should open the doors to the store stock market, which is a must if the system is to become a major vehicle for livestock ownership transfer.



These ideas and many others can only add to the benefits already apparent from computer livestock selling. I can foresee the day when , Australian livestock and/or meat can be marketed on a computer system 24 hours a day, every day, to buyers located domestically or internationally.

My assessment of computer livestock marketing is that it offers a major breakthrough in reducing the costs of marketing stock for producers but also the costs of acquiring stock for purchasers. It is an innovation that, if handled sensibly, offers advantages to all segments of the livestock industry as well as improving the end product for the benefit of consumers.

#### FUTURE OF COMPUTERISED LIVESTOCK (CATTLE & SHEEP) SELLING SYSTEMS

R. LACEY\*

As has been stated, the concept of computerised selling is being developed fairly rapidly in Australia. By the time of this conference a feasibility study on a national livestock selling network will have been released and industry conferences conducted to discuss and (hopefully) implement its findings. In' this context it would seem timely to discuss the likely place of computerised selling in the total 'market' for livestock selling systems.

#### POTENTIAL MARKET SHARE

Available data (Bureau of Agricultural Economics 1981) suggest that approximately 66 per cent of Australia's cattle are sold in public saleyards, either on a per head or a per kilogram liveweight basis. The remaining cattle are sold by private treaty with stock moving directly from farm to slaughter. For sheep and lambs it is believed that a higher proportion is sold through the saleyards.

While the dominance of the saleyards is attributable to many factors, three are of major importance. Firstly, the saleyards provide a venue with active competition for stock. In addition to its direct advantages, this attribute is also of value in terms of minimizing the information required by vendors wishing to trade in the market. Competition will value the vendors' stock and some one will buy them. This does not guarantee wise trading by vendors (i.e. selling the right product at the right time) but it does guarantee a relatively fair valuation of their product. Secondly, the saleyard provides a venue for the assembly of small and mixed lots to allow their aggregation into efficient transport units. From experience with NELCM, and observation of other sale by description trials, this attribute may be the most valuable aspect of the saleyards. Thirdly, the transaction process in the saleyards is relatively impersonal with the code of "caveat emptor" predominating. Many vendors seem to prefer this situation to one in which they must haggle/negotiate, and in which sales rely on a greater degree of trust between the trading parties.

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Where truck size lots are available, direct/private treaty trading offers an operationally more efficient means of trading. Transport costs, bruising, **carcase** shrink and loss of meat quality are all minimized. Potentially it is also a very low cost means of trading. Direct trading requires a higher degree of trust between traders, but where this is developed it can provide a valuable means of securing continuity of supply. The most general criticism of direct trading is that it lacks active competition and provides little or no market information.

Computerised selling offers a sale venue which:

1. Provides an even higher degree of competition than the **saleyard** system (because trading information is universally available)
2. Has the operational efficiencies of direct trading (where stock are turned off in truck size lots)
3. Requires a higher degree of trust between traders than the **saleyards** (**i.e.** is more personal than the **saleyards**) and a lesser to equal degree of trust than direct selling
4. Is not conducive to informal/tacit arrangements for continuity of supply between a vendor and a buyer
5. Is capable of providing very high quality market information.

It would seem that the immediate market for computerised selling lies with those producers turning off truck size lots. Computerised selling will not, however, completely capture this target market. Direct selling will still attract stock because of its potentially very low cost and ability to allow informal supply arrangements. Saleyards will attract stock because of their convenience attributes (e.g. a lower degree of trust required between trading parties).

Using herd and flock statistics from the Australian Bureau of Statistics and the BAE, the Agricultural Business Research Institute (1983) estimated the market share of computerised selling over the next 5 to 10 years to be 10 to 15 per cent of all cattle and sheep traded. If this eventuates it would seem likely that market shares will be **saleyards** 50 per cent, direct selling 35 per cent and computerised selling 15 per cent. The projected stability in the market share of direct selling does not imply that this system will not be affected by computerised selling. It is thought likely that more vendors than at present will use direct selling as better price information will be available. Hence, while stock will be diverted from direct sale to computer sale, they will also be diverted from **saleyard** to direct sale.

#### IMPLICATIONS FOR INDUSTRY POLICY

The above discussion suggests that computerised selling will gain a significant but minor share of the livestock market. Despite its minority market share it will produce high quality market information and is likely to become the 'price barometer' for all livestock markets.

Development and operation of a computerised selling system will exhibit substantial economies of scale (ABRI 1983), yet the projected market share for this type of selling is not great. Thus if the potential economies of scale are to be captured the number of computerised selling systems should be minimized. A proliferation of schemes would lead to higher costs and hence inhibit the commercial success of this type of selling. The prescriptive implication of this situation is that industry policy should aim to limit the number of systems developed. However, there is also the descriptive implication that because the lowest cost solution is to have one computerised selling system, in the long run only one (monopoly) system will survive. Industry policy should therefore be aimed at developing a national selling system whose form of ownership and control encourages a wide range of users (e.g. agents), but which minimizes the risk of monopoly profits being exacted. One such form of ownership might be a national network developed by a statutory body but which operated with its own, industry representative board.

The computerised selling system would produce high quality market information. This could be used to trade outside the market (i.e. direct/private treaty). In this sense this market information is of value to the industry in general. The operator of the computerised selling system should be able to sell this information for profit, yet from an industry perspective such information should be universally available at a price equal to its cost of dissemination. It should be noted that this would provide nil return to the owner of the information. Hence the ownership and distribution of market information from computerised selling is also of importance. This information might effectively be purchased and distributed (at media cost only) by the Government.

To a significant extent the success of computerised selling will depend on the ability of industry policy makers to accommodate the above arguments. Failure to tackle these problems may well cause computerised selling to develop as a high cost alternative little used by the industry.

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