

**Australian Agricultural and Resource Economics Society (AARES)
52nd Annual Conference**

Canberra, Australia

5 – 8 February 2008

**PRODUCT AND BRANDING INNOVATIONS IN THE AUSTRALIAN
BEEF MARKETING SYSTEM**

Luis Emilio Morales¹, Euan Fleming¹, Vic Wright¹, Garry Griffith^{1,2} and Wendy Umberger³

¹ Faculty of the Professions, University of New England, Armidale.

² New South Wales Department of Primary Industries, Armidale.

³ School of Agriculture, Food and Wine Business, University of Adelaide, Adelaide.

Corresponding author:

Luis Emilio Morales
School of Business, Economics and Public Policy
University of New England
Armidale NSW 2351
Email: emorales@une.edu.au

PRODUCT AND BRANDING INNOVATIONS IN THE AUSTRALIAN BEEF MARKETING SYSTEM

L. E. Morales¹, E. Fleming¹, V. Wright¹, G. Griffith^{1,2} and W. Umberger³

¹ School of Economics, Business and Public Policy, University of New England, Armidale.

² New South Wales Department of Primary Industries, Armidale.

³ School of Agriculture, Food and Wine Business, University of Adelaide, Adelaide.

1.0 ABSTRACT

Meat Standards Australia (MSA) represents a new beef classification system, derived from consumer preferences, which allows classifying beef in interesting ways to consumers and creates the basis for product differentiation and branding. Currently, branding of beef cuts occurs on a limited scale; however, research has revealed clear segmentation across consumers and premiums for preferred products in niche markets. The objective of this study is to identify the potential for large-scale differentiation and branding in the Australian beef marketing system and how this may best be done given the structure of the supply chain.

Key words: Innovation, Branding, Australian beef marketing system.

2.0 AUSTRALIAN BEEF MARKETING SYSTEM

The beef industry is one of the most important in the Australian agricultural sector, contributing some \$7.4b to gross value of production (MLA 2007). The industry has developed considerably during the past century. A more integrated supply chain and the introduction of MSA grades have improved the quality of beef commercialised into the market. The industry has evolved from a disorganised, commodity-based system, with low-quality output and focused on farm production, into a more organised industry composed of many supply chains with shared incentives, defined roles and focused on high quality to respond to the standards demanded in overseas and domestic markets. This massive change in the scale and focus of the industry is related to innovative research, development and investments in:

- 1) **Breeding, genetics and production technologies:** Through the development of different local breeds adapted to specific regions, the industry has increased the quality and volume of beef production. Australia has two different broad systems of beef production: northern and southern. In the north (Queensland, the Northern Territory and upper regions of Western Australia) cattle properties and herd sizes are very large, extensive cattle production systems, which are characterised by grazing native pastures at low densities. This production system represents 73% of the Australian beef industry and is mainly oriented to exports to the United States. On the other hand, southern farms are smaller and cattle graze intensively on improved pastures and fodder crops. These cattle are sold into the domestic market and exported to Japan and Korea (Cox *et al.* 2003 and Gong *et al.* 2007).

¹ Correspondence to Luis Emilio Morales emorales@une.edu.au, Ph.D. Student of School of Business, Economics and Public Policy, University of New England, Australia.

- 2) **Development of the feedlot sector:** Since the 1960s this sector has grown dramatically, because some export markets (Japan in particular) are requesting consistent high quality and marbled beef. Two thirds of feedlot output is exported to the U.S., Japan and other Asian countries such as South Korea, and the other third is sold into the domestic market mainly through supermarkets, to meet consumer demand for improved eating quality (Clark *et al.* 1992 cited in Griffith *et al.* 2004).
- 3) **Cattle selling systems:** Farmers have faced a wider range of alternative systems for selling their animals, incorporating new technologies as a way to receive the best price for their production and the incentives needed to reach high quality standards. Saleyard auctions are the most important method but over-the-hooks and direct sales have increased in importance during recent decades (Cox *et al.* 2003 and Gong *et al.* 2007).
- 4) **Meat promotion and trade agreements:** The Australian government has consistently supported institutions such as the Australian Meat Board (1936-1977), Australian Meat and Livestock Corporation (1977-1998) and MLA (1998 to present), which are oriented to promoting Australian beef both domestically and in export markets. Efforts to improve access to international markets, better trade conditions and favourable relationships with government and private industry organisations controlling meat imports and distribution in overseas markets have also been part of Australian beef industry policy (Bureau of Agricultural Economics 1981 and MLA 2007).
- 5) **Development of the domestic market:** The Australian domestic beef market has increased in sophistication, because consumers now are better educated and they are requesting higher quality products and are willing to pay an extra price for them. This is partly a result of investment in promotion and partly due to changes in the products offered, thus focusing more on consumers' preferences and needs (Polkinghorne *et al.* 2006).
- 6) **Processing, packaging and transportation technology:** Abattoirs have a crucial role in the supply chain in transforming cattle into high quality beef. For this reason, they have to reach minimum safety standards and maintain correct processes for getting the highest quality possible with the cattle slaughtered. The conditions of transportation are also checked for maintaining the quality of the production (Cox *et al.* 2003 and Gong *et al.* 2007).
- 7) **Retail concentration and differentiation:** In 1961, 4% of the meat was sold in supermarkets while in 1995 the volume reached 46%. Supermarkets now account for close to two-thirds of the commercial beef product sales. Supermarket sales are typically medium quality but well-priced. Overtime, supermarkets have increased their involvement in the value chain through quality improvement, development of more convenience products, one-stop shopping, improved packaging and more competitive prices. Consumers can also buy higher quality beef in butchers, specialised stores and restaurants (Gong *et al.* 2007).
- 8) **Meat Standards Australia:** MSA has focused beef production on quality, consistency and consumer preferences. Through the new grades, consumers have more information about the quality of the product available for purchase (Carriquiry 2004 and Polkinghorne *et al.* 2006).

Innovation, therefore, has played an important role in developing and increasing the competitiveness of the Australian beef industry, improving the performance of the system. Historically, it has been focused on improving breeding, cattle production and processing technologies through better genetics technologies, good agricultural practices and improving abattoir conditions and management.

Nowadays, farmers send their cattle to abattoirs that process, classify, package and deliver the beef to restaurants, butcher shops or supermarkets. The structure and behaviour of food retailers have changed in recent decades, including more quality requirements, additional processing and new product varieties (Jacenko and Gunasekera 2005). Livestock can be sold directly to an abattoir or be transferred to a feedlot or a fattening property that finally will sell them to an abattoir or will export them (see Figure 1).

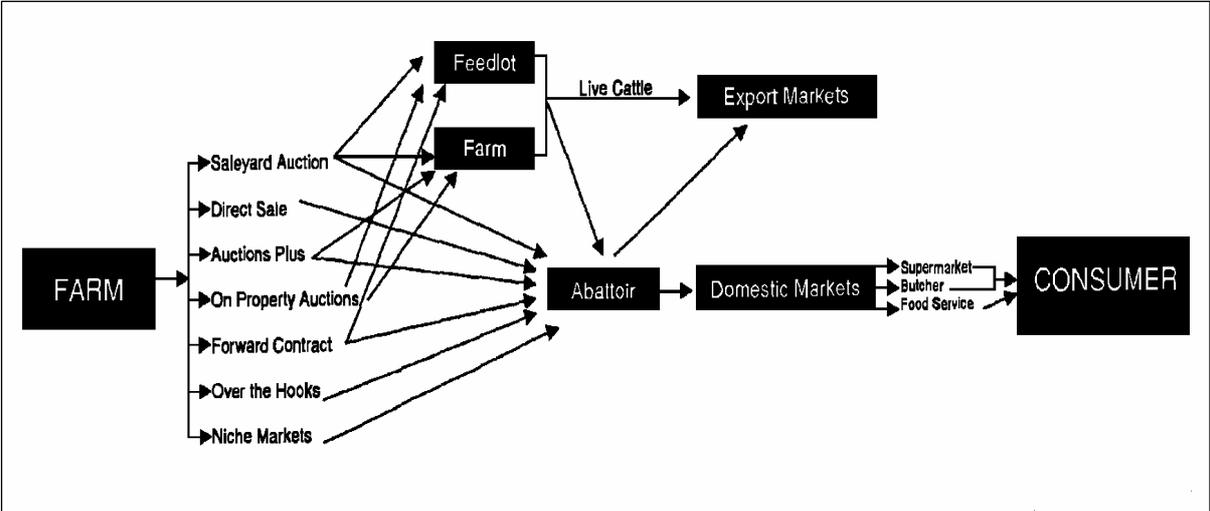


Figure 1. Australian beef supply chain.
 Source: Cox *et al.* 2003.

Cattle are transformed into beef and by-products such as offal and hides at the abattoir; after that, the output is packaged in a variety of ways in relation to the needs of each market. Beef is received at the butcher shop or supermarket (retailers) in refrigerated trucks from the abattoir. Alternatively, the product could first go to a wholesaler who will then sell it to retailers or restaurants. Finally, meat could be exported by ships or by airplane in refrigerated containers (Cox *et al.* 2003 and Gong *et al.* 2007). Stores receive products as “case ready” steaks, roast, hamburgers and sausages that are ready to sell and not in need of further transformation or packaging (Polkinghorne *et al.* 2006).

3.0 BEEF MARKETING AND MEAT STANDARDS AUSTRALIA

Until the 1980s butcher shops were the most important segment of meat retailing, however, supermarkets are now the most important retailer. Supermarkets and grocery stores have been increasing their participation in food retail sales. In 2002, the two largest supermarket chains, Woolworths and Coles, shared 76 per cent of food retail sales. Retail food sector concentration has resulted in an increase in information about consumers’ requirements flowing to producers, allowing them to improve the characteristics of production in pursuit of a price premium. On the other hand, farmers have been able to sign contracts, giving them price stability and more stable cash flow (Jacenko and Gunasekera 2005).

Quality differentiation in fresh meat retailing is rare in supermarkets. The capacity for consumers to express their preferences is severely constrained as a result and the profitability of the entire supply chain is thus muted. The commercialisation of beef mainly involves a 'commodity – raw material' approach without differentiation. This situation is very far from the behaviour of best value supply chains, which are at the same time focused on cost, quality, speed and flexibility, because they are agile, adaptable and aligned (Ketchen and Hult 2007).

Some traditional outlets have survived, but they share a small part of the market with needs not met by larger retailers. Some consumer segments are not satisfied with the larger retailers' offer, allowing small stores, such as Polkinghorne's and Coorong Angus Beef, to differentiate their offer through specialisation and personal service (Jacenko and Gunasekera 2005).

Overall then, the major constraints in the current beef marketing system appear to be: a) a lack of choice enabling customers to express their quality preferences; b) a lack of price incentives for improving the quality of beef (in branding and differentiation); and c) the presumption that customers are not willing to pay premiums for a better quality. These constraints are operational problems affecting the beef market related to imperfect and asymmetric information, an important type of market failure characterised by the lack of signalling instruments in the market which ensure credible information about product quality (Jahn *et al.* 2005 and Latvala and Kola 2003 cited in Lüth and Spiller 2005).

The MSA system offers a great opportunity to overcome some of these constraints. MSA is a voluntary beef grading system which has increased information on beef quality because it allows identification of the origin, characteristics and quality of each cut sold into the market. MSA is an eating quality evaluation system based on scientific methods to indicate the eating quality of a specific cut (Cox *et al.* 2007). Beef quality naturally varies between different carcasses causing cut and price to be unreliable indicators of quality or value for consumers. This happens because cuts react differently to production inputs (such as breed type, weaning and Hormonal Growth Promotants (HGP's), ossification, marbling, carcass weight, processing conditions (including hanging, pH and temperature) and value-adding inputs (such as ageing and cooking method).

The MSA grading model enables the estimation of the quality of each cut in relation to an MQ4 score. The MQ4 scoring system was developed on the basis of research showing how consumers relate quality to tenderness, juiciness, flavour and overall satisfaction (Polkinghorne *et al.* 2006). MSA identifies grades of products and a description relating grade to cooking context as "unsatisfactory" (no grade), "good everyday" (3 star), "better than everyday" (4 star) and "premium quality" (5 star). The industry does not commercialise cuts below 3 star grade MQ4 (Carriquiry 2004).

The MSA price premium on a complete wholesale carcass has been calculated as \$0.29/kg while specific cuts have shown premiums between \$1.11/kg and \$6.00/kg (Dart *et al.* 2007). Beyond this, the highest-value, MSA-graded cuts can achieve premiums of \$15/kg when they are branded and commercialised as guaranteed cooked-result products (Carriquiry 2004 and Polkinghorne *et al.* 2006).

The main objective of MSA is to supply uniform and guaranteed eating-quality beef for any cut sold, creating a large quantity of new products of unconventional appearance. Another important issue is how to sell each cut for its most appropriate use (that which reaches the

highest MQ4 score for the cut) as a way to maximise the retail value. Now consumers have more information about the quality of the product they are buying, but it is necessary to include information about traceability, achieve quality homogenisation and offer better presentation of products to meet a range of preferences.

Branding becomes pertinent here as a mechanism by which information about quality is provided to customers and as a guide to the standards that the whole value chain needs to follow (Lüth and Spiller 2005). In this context, the actual challenge is to develop new branded products which increase the information about the characteristics and quality of the product for the customer such that they will be willing to pay an extra price and, in this way, increase the profit for the companies involved in the Australian beef marketing system (Polkinghorne *et al.* 2006).

4.0 BEEF BRANDING

Meat bought by consumers contains a group of attributes provided by the producer (such as taste, tenderness and colour) and by the processor and retailer (such as packaging, further processing, convenience and advertising) (Hayes *et al.* 1998). An important type of market failure is imperfect and asymmetric information, which creates operational problems, especially in food markets. In this sense, Akerlof (1970 cited in Lüth and Spiller 2005) said 'poor quality products will prevail over high quality products if there are no signalling instruments in the market which ensure credible information', because high quality products will not receive a price premium. In this context, brands can operate as quality assurance, customer relationship and signalling tools for guaranteeing high and consistent quality standards (Lüth and Spiller 2005).

The red meat industry in Australia, as in many countries, has not developed many brands as quality signals, because consumers have not been willing to pay for a better quality they cannot recognise and the efforts for improving this situation have been scarce. For this reason, most of the meat sold is unbranded, has private labels with small promotion budgets, and quality assurance programs oriented more to meeting producers' requirements than consumers' expectations (Alvensleben 1997 cited in Lüth and Spiller 2005).

There are various categories of innovation in supply chains. In this study, the focus is on sustaining innovations through a business model aimed at higher margins through differentiation and segmentation (Gray *et al.* 2004). This is oriented to creating value innovations (exceptional value for the customer), but not all technical innovations lead to customer value.

Branding and differentiation in the beef market represent a new alternative for improving the effectiveness of the beef marketing system in meeting consumer preferences with the resources available, including investments for the implementation of MSA-related enhancements to abattoir facilities such as processing and packaging, chilled storage, data capture devices and software. Branded products can efficiently make use of these prior investments. In this way, the sector will be able to offer a higher quality product based on more information about traceability (based on MSA files), nutritional attributes, cooking suggestions and better presentation.

Branding is the first necessary step in product differentiation: specific identification of a product as different from other products from unidentified sources. Recent research into fresh

food brand premiums suggests that branded products, generally, have a higher price because customers expect they have advantages in three areas:

- 1) **Quality:** Consumer learning (testing the product in stores or using demonstrations) and durability affect the quality gain in a branded product.
- 2) **Design:** More attractive appearance and better performance are associated with branded products.
- 3) **Prestige:** The buyer's self-image is increased by branded products (Jin *et al.* 2007).

Product quality assessment requires time and skills and can, in the case of hidden characteristics (experience and credence attributes), be difficult or impossible to undertake. Brands solve this problem to the extent that they are found to be reliable indicators of the presence of search and experience attributes, or are trusted to provide credence attributes. In this case, customers with higher income will be willing to pay a bigger premium for branded products because they have a higher opportunity cost of testing products. Other socio-demographic factors, such as education, age, race, gender and household size, also influence the willingness to pay for brands (Jin *et al.* 2007).

Two paths have been followed to enhance product differentiation and branding in product management: private brands and generic labels. They have the same goal of better meeting changing consumer demands. Each path is not being followed in isolation from the other, but they have their own distinct characteristics. Brand strategies (followed by niche retailers such as Polkinghorns) have high sunk costs in advertising for reaching a large degree of recognition; therefore, the producers have an interest in protecting their brand and differentiating their output. On the other hand, generic labels (such as MSA) have a low degree of brand recognition as a result of small advertising investment. This situation stimulates free rider behaviour of some producers, which does not help to strengthen the production process, and does not stimulate value chain partners to exceed the quality level controlled by external certification institutions (Lüth and Spiller 2005).

Advertising effort is oriented to increasing the demand of a specific product. In the case of no-brand institutional advertising or generic advertising, the focus is to increase the demand for generic products. On the other hand, in the case of brand advertising the objective is to increase the demand and make it more price inelastic (Dahl and Hammond 1977).

The economic effect of branding and differentiation is based on an assumption that customers perceive an increase in the quality of the product, and that this influences their willingness to pay and reduces their price elasticity of demand. In the case of a new branded product developed by a company, we could expect the following situations: a) an increase in retail demand (because the new product represents a higher level of utility for consumers) that will be transmitted to the farm-level demand; b) the development, production and advertising costs of introducing the new brands at the retail and farm levels; c) a change in the marketing margin (mm), because the retailer could increase the margin and share proportionally the benefits with the farmer as an incentive for receiving higher quality products; and d) brand advertising of the product will increase the quantity demanded and will make the demand more inelastic. These effects are shown in Figure 2 (Dahl and Hammond 1977 and Besanko *et al.* 2006).

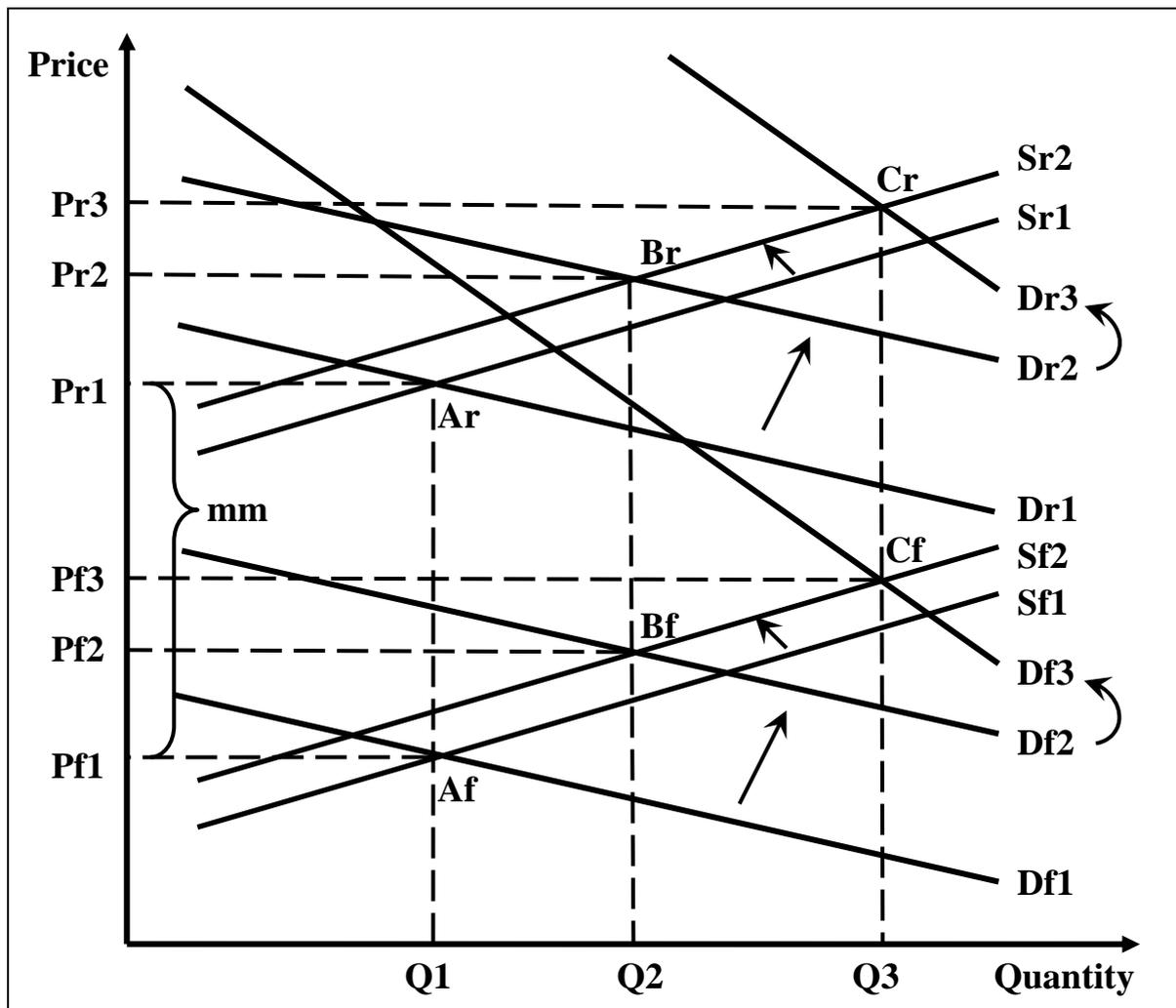


Figure 2. Economic Effect of Branding and Differentiation

Source: Adapted from Dahl and Hammond (1977) and Besanko *et al.* (2006).

Initially, quantity $Q1$ is selling at price $Pf1$ by farmers (point Af) and at price $Pr1$ by retailers (point Ar); the difference in these prices corresponds to the marketing margin (mm). The introduction of a new product (such as MSA-graded beef cuts) into the market generates an increase in the retail demand ($Dr1$ to $Dr2$) which is transmitted to the derived demand which farmers face ($Df1$ to $Df2$). In the same way, the cost to generate and introduce a new product into the market reduces the farmer supply ($Sf1$ to $Sf2$); this movement is transferred to the retail supply ($Sr1$ to $Sr2$). As a result, quantity $Q2$ is selling at price $Pf2$ by farmers (point Bf) and at price $Pr2$ by retailers (point Br). Finally, brand advertising the new product generates a change in retail demand and makes it more price inelastic ($Dr2$ to $Dr3$), which is also reflected in the derived demand ($Df2$ to $Df3$). As a consequence, at the new equilibrium, quantity $Q3$ is selling at price $Pf3$ by farmers (point Cf) and at price $Pr3$ by retailers (point Cr).

Some specialised retail companies have moved initially from the point Ar to point Br by offering products labelled with MSA grades. After that, they have reached the point Cr with higher prices and quantity sold, using a differentiated, branded and guaranteed product offering to make the demand curve more inelastic (curve $Dr3$).

For smaller companies, it is easier to identify their customers' preferences and organise the complete production for meeting the standards required. This, in addition to differentiation and branding, has allowed such firms to achieve significant price premiums. For example, in the Polkinghorne's company, a group of new products have recently been developed, trademarked and promoted as a way to differentiate their offer from competitors. These products are fully cooked prepared dishes, meals based on mince, cubes, stir fry and thin slices of beef. Trademarks like Rodz® (25 mm strips for grilling), Shumi® (4mm thin sliced beef of specific quality) and Wok Stir® (stir fry strips) have appeared in the market. An image developed close to core values of an ethical and environmentally sustainable supply chain was branded with a guaranteed quality. In this way, customers have changed their perception about the store's offer from raw material to guaranteed cooked result and the company receives a premium for this innovation (Polkinghorne *et al.* 2006). In the future, consumers may recognise beef trademarks as readily as other category products such as electronics.

As noted above, MSA price premiums for the highest value cuts have been found to range between \$1.11/kg and \$6.00/kg, while they can achieve as much as a \$15/kg premium when those cuts are commercialised as branded products. This indicates the existence of significant returns to the provision of MSA information and to branding itself. A key question is the importance to consumers, across the main markets the Australian industry serves, of such information.

Domestically, the major retailers have a home brand for generic products. If their minimal presentation of quality-differentiated beef is a valid reflection of the low sensitivity of most consumers to the experienced variety in beef quality, the prospects may be not profitable for investment in large-scale branding of beef for much larger market segments than those being served by small differentiated companies. The size of quality beef consumers' segments, their preferences and related price elasticity of each group is central to implement beef branding and differentiation on a large scale.

5.0 THE POTENTIAL TO CREATE A BEST VALUE BEEF SUPPLY CHAIN

Beef is currently marketed as a 'commodity-raw material' without differentiation. For this to change a re-orientation in the operation of the current marketing system will be needed. The transformation of the Australian beef marketing system into a Best Value Supply Chain would allow it to be more competitive against other agri-food chains and help to differentiate and brand, because such a chain: 1) would react quickly to unexpected or rapid shifts in supply and demand, because it would be oriented to satisfying customers' expectation; 2) would reorganise the chain, moving facilities, changing supplies and outsourcing, to improve its efficiency; and 3) would have persistent interest from all participants in the chain, assuring product specifications and quality (Ketchen and Hult 2007).

The Cooperative Research Centre for Beef Genetic Technologies (Beef CRC) and MLA are institutions involved in the development and improvement of the complete supply chain. The Beef CRC has always been focused on increasing the quality of beef, but mainly at the production level by improving profitability, productivity, animal welfare and responsible resource use through genetic research and accelerated adoption of beef industry technologies (Beef CRC 2007). More recently, the Beef CRC and MLA were involved in the research to develop and implement MSA, which identified the relationships between observable beef characteristics, cooking methods and consumer preferences for creating a model that predicts

beef eating quality (Dart *et al.* 2007). At present there is a focus on working with supply chains as a vehicle for accelerating the uptake of the MSA technology.

The Beef CRC has the challenge of improving the productivity and profitability of the beef industry through such an approach by encouraging the uptake of new technologies that improve the quality of beef produced and consumed. The CRC is working in partnership with MLA and large industry firms to change perceptions of quality in the wider beef market. Branding and product differentiation are one way to improve the quality perceived by consumers who are willing to pay an extra price for being sure about the quality of the product they are buying. Consumers will have the choice to buy a product which better fits their preferences and the companies will receive a higher price for their products.

Initially, focus group research and analysis of company sales data will be used to assess the profitability of beef branding and differentiation. One case study will be Polkinghorne's, which has three shops and supplies other retail stores in Melbourne. Polkinghorne's is a vertically integrated company oriented to sell high quality fresh meat products and home-style cooked meals in a new and contemporary retailing format. The company carry out the complete process of bringing a meal from the farm into the store and has high quality standards at every production stage (Polkinghorne's 2007).

Polkinghorne's represents an interesting case for studying, because the company has oriented the entire chain to satisfy customers' preferences not met by larger retailers' offer. The firm is offering convenience, consistent high quality and easy to prepare products, combined with branding attributes relating to the origin of the food and the production process involved. In this way, the company has reinvented the traditional butcher shop into a branded, fresh meals store. Through this strategy, Polkinghorne's is receiving a price premium for its products (Polkinghorne's 2007).

The focus group research has the objective to identify:

- 1) The reasons why customers prefer to buy meat in Polkinghorne's store rather in supermarkets.
- 2) The willingness to pay a price premium for a branded product.
- 3) The characteristics and estimated size of different groups of customers.

The methodology includes analysing three groups of eight customers with different characteristics. During the sessions, the moderator will talk about the importance of this activity for Polkinghorne's company as a way for reaching their preferences; will collect personal data about customers; will discuss about their preferences for buying beef and premiums for branding products as an equal to high quality – value added products; and will give some product samples or other gifts to customers interviewed.

The second case study will focus on another successful Australian vertically-integrated meat company in South Australia. This business owns a commercial beef herd, feedlot, boning and distribution facility and several branded retail outlets. This company use brand names related to the specific region their product originates from or the breed of animal the meat came from. The business has formed close strategic alliances with a processor and several restaurants and premium meat retailers. In addition to selling through their privately-owned high-end retail

outlets, their branded beef products are sold through several fine restaurants and retail outlets. This is rather innovative as they base their product decisions on both market and product research, and have a database of customers from their retail stores.

The last case will also address the research objectives identified previously in the Polkinghorne case study. Similar methods will also be used: focus groups with end-consumers as well as interviews with retail and restaurant customers.

6.0 CONCLUSION

The Australian beef industry has improved its performance through improvements and innovations in production, processing and commercialisation, and a big effort in promotion and trade agreements. One important step has been the development of MSA based on customer preferences, which has introduced a new quality classification and has given information to customers about the quality of each cut sold into the market.

Given the acceptance of MSA grading, branding and product differentiation represent a potential new innovation for meeting a range of customers' preferences and for receiving an extra price for quality branded products, because brands can provide a guarantee of high quality standards.

Some small specialised companies have received higher prices and quantity sold, facing more price inelastic demand, through introducing MSA grades and after that, offering products differentiated, branded and guaranteed. They are offering high quality, consistent quality and cooked products that guarantee to meet consumers' expectations as a way to receive an extra price for their products.

The challenge for the industry is whether it is feasible and profitable to develop a wider range of brands on a larger scale and, supported by advertising efforts, whether it is possible for customers in the future to be able to recognise a range of branded beef products with different attributes, uses and origins.

7.0 REFERENCES

- Beef CRC, 2007. Webpage. Retrieved 10 December 2007 from <http://www.beef.crc.org.au>
- Besanko, D., D. Dranove, M. Shanley and F. Schaefer, 2006. Economics of Strategy. John Wiley & Sons, New Jersey, United States of America. 606 pp.
- Bureau of Agricultural Economics, 1981. Livestock and Meat Marketing in Australia: An economic evaluation. Industry Monograph No. 1. Australian Government Publishing Service, Canberra, Australia. 117 pp.
- Carriquiry, M., 2004. Guaranteed Tender Beef: Opportunities and Challenges for a Differentiated Agricultural Product. Centre for Agricultural and Rural Development (CARD). Working Paper 04-WP 371. Iowa State University. Retrieved 17 September 2007 from <http://www.agmrc.org/NR/rdonlyres/B8D666F5-0CB0-471B-A72B-5779D0C4CC46/0/tenderbeefcard.pdf>

- Cox, R., Z. Zhou and J. Choi, 2003. Beef Supply Chains in Australia: Implications for Korean Beef Industry. Asian Agribusiness Research Centre (AARC). Working Paper Series No 34. The University of Sydney, Orange, Australia. 25 pp.
- Dahl, D. and J. Hammond, 1977. Market and Price Analysis: The Agricultural Industries. McGraw-Hill Inc., New York. 323 pp.
- Dart, C., G. Griffith, H. Rodgers and J. Thompson, 2007. The Aggregate Economic Benefits at the Wholesale Level from the Adoption of Meat Standards Australia: First Estimates. Unpublished paper, submitted to Australasian Agribusiness Review.
- Gong, W., K. Parton, Z. Zhou and R. Cox, 2007. Beef Supply Chain Management in China and Australia: A Comparative Perspective. Work Paper for the Symposium on China's Agriculture Trade: Issues and Prospects. Beijing, China, 8-9 July. Retrieved 7 September 2007 from <http://www-agecon.ag.ohio-state.edu/programs/Anderson/trade/54Gong.pdf>.
- Gray, A., M. Boehlje, V. Amanor-Boadu and J. Fulton, 2004. Agricultural Innovation and New Ventures: Assessing the Commercial Potential. American Journal of Agricultural Economics, vol. 86(5), pp. 1322-1329.
- Griffith, G., A. Coddington and S. Murdoch, 2004. Beef Feedlot Supply Response in Australia. Meat Research Corporation. Faculty of Agriculture and Food Systems. Australasian Agribusiness Journals – Online. Agribusiness Review, vol. 12: Paper 1. Retrieved 17 December 2007 from <http://www.agrifood.info/review/2004/Griffith.html>.
- Hayes, G., B. Malcolm, A. Watson, M. O'Keeffe and L. Thatcher, 1998. Strategic alliances and the red meat industry in Australia. Meat Research Corporation. Faculty of Agriculture and Food Systems. Australasian Agribusiness Journals – Online. Agribusiness Perspectives Papers 1997/98: Paper 12. Retrieved 7 September 2007 from <http://www.agrifood.info/perspectives/1998/Hayes.html>.
- Jacenko, A. and D. Gunasekera, 2005. Australia's retail food sector: Some preliminary observations. Australian Bureau of Agricultural and Resource Economics (ABARE). The Pacific Food System Outlook 2005-06. 11-13 May, 2005. Kunming, China.
- Jin, Y., D. Zilberman and A. Heiman, 2007. Choosing Brands: Fresh Produce Versus Other Products. American Journal of Agricultural Economics, vol. 86(5), pp. 1247-1248.
- Ketchen, D. and G. Hult, 2007. Bridging organization theory and supply chain management: The case of best value supply chains. Journal of Operations Management, vol. 25, pp. 573-580.
- Lüth, M. and A. Spiller, 2005. Brands as Quality Signals in the Meat Sector: A Conjoint Analysis. International Food and Agribusiness Management Association (IAMA). 15th Annual World Food and Agribusiness Forum: Symposium and Case Conference. 25-28 June, 2005. Chicago, United States of America. Retrieved 18 October 2007 from http://www.ifama.org/conferences/2005Conference/Papers&Discussions/1127_Paper_Final.pdf

Meat and Livestock Australia (MLA), 2007. Fast facts beef 2006. Retrieved 10 August 2007 from <http://www.mla.com.au/NR/ronlyres/ED5DA007-A196-4283-B731-FB9B8F4E-E204/0/FastfactsBeef2006.pdf>.

Polkinghorne, R., J. Philpott, A. Gee, A. Doljanin and J. Innes, 2006. Development of a commercial system to apply the Meat Standards Australia (MSA) grading model to optimisation of eating quality along the beef supply chain. Unpublished paper, Polkinghorne Pty. Ltd. Longwarry, Victoria, Australia.

Polkinghorne Pty. Ltd., 2007. Background Information. Unpublished document, Polkinghorne Pty. Ltd. Longwarry, Victoria, Australia.