

Successful Models of Vertical Integration in the Beef Industry

Rewards, risks and opportunities for value chain creation in the Australian beef industry

A report for



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Executive Summary

Beef producers farm today in a social environment where beef consumers demand to know more about their food; expecting transparency on ethical, sustainable and environmental practices within the industry. Consumer awareness is forcing a shift away from the traditional model of maximum production at minimal cost. Internationally, the industry is adapting with a move away from traditional beef supply chains to the implementation of modern value chains that reflect the expectations of engaged consumers in a competitive market place.

Agriculture in Australia is a game of managing risk. Beef producers deal with the risks posed by a volatile climate on a daily basis, alongside the market risks determined by the commoditised nature of the beef industry where they are the 'price-takers' in the supply chain. This report initially examines the fundamental factors that determine the present nature of the Australian beef industry: climatic volatility; export dependency; competition and distrust; and consumer consumption trends.

Secondly, the report investigates international models of vertically integrated red meat value chains that have successfully responded to the changing landscape of food culture. It explores businesses that: own the entire supply chain from production to retail; work with trusted suppliers to add value to all partners in the supply chain; develop alliances to market their differentiated products; and cooperatives where members work together to benefit producer and processor.

Finally, the report draws together the market opportunities and threats facing the industry and how those factors influence the future of the Australian beef industry.

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Foreword

In 2004, I left corporate life in the USA and moved back to our family property near Armidale in Northern NSW. My family has raised grazing animals in the New England region of NSW since 1860 and I hoped to continue this tradition. I also believed livestock farming was a sustainable and responsible way to produce food for the future and that meat is a valuable part of the human diet.

With the global population set to hit an estimated nine billion people by 2050, feeding the world has become a leading issue in political, business and public discussion. Consumers today have more choice and access to information about where their food originates and the process by which it ends up on their plate.

The beef industry in Australia has challenges ahead to meet future demand for food, but it is the supply risk that dictates the nature of the industry at present. This leaves little certainty to build a profitable, sustainable business to capitalise on unprecedented future consumer demand. As a producer, I may focus on supplying the highest quality article in the most efficient manner possible and still be at the mercy of the supply/demand volatility that drives the industry. A processor may operate the most sophisticated plant in the industry, yet be unable at times to source enough animals to operate it.

Due to this volatile environment, there has never been more mistrust in the beef industry between farmers, processors and retailers. I believe our industry value chains must incorporate better communication and understanding to allow participants in the beef industry to work together to provide consumers with the products they want. Australian beef must provide the high levels of quality, welfare, traceability and transparency demanded by consumers.

Over the course of my study I asked those I interviewed – “how do you justify beef in the modern diet?” There is no doubt this is a question being posed by consumers with a range of protein choices available to them, and as both plant-derived and synthetic proteins gain increased market share and acceptance. Are we prepared for the answer to the question “why should I eat beef?”

Acknowledgments

Special thanks must go to my sponsor Rabobank, without their support this report would not have been possible. In addition they helped make introductions for many of my meetings and I have a great respect for their commitment to agriculture.

There are many other people to thank over the course of my journey preparing this report:

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For my good friend Andy Finlay in Cambridge, New Zealand, for having me arrive on his doorstep every month and taking me around to all his clients to talk markets, supply chains and all things agriculture.

To the New Zealand scholars, Bede O'Connor, Tom Skerman, Sam Lang and Jessica Benseman for their hospitality and introductions to contacts.

To the folks at Atkins Ranch for introducing me to so many elements of their supply chain, and allowing me to follow their supply chain from the field at Rahiri Farm, New Zealand to the retail shelf in New York City.

In Brazil; thanks to Sally Thomson for her tireless organisation and setting up meetings for me. To Ricardo Bronha, for his fantastic hospitality and friendship and introducing me to life in Brazil, also Pedro Merola and Joao Martinez for their time and hospitality.

To the many people and business who hosted me and shared their knowledge and lessons, (in many cases to a total stranger) – they all know they have a place to visit and stay when they come to the New England in NSW, Australia.

Abbreviations

ABC – Australian Broadcasting Corporation

ACC – Australian Country Choice

ACCC – Australian Consumer Competition Commission

COP – cost of production

CNB – Country Natural Beef

Cwt – carcass weight

GAP – Global Animal Partnership Standards

Kgs - kilograms

Lwt – live weight

MLA – Meat and Livestock Australia

NZ – New Zealand

USA – United States of America

USPB – US Premium Beef

USP – Unique selling proposition

Objectives

The objectives of this report are:

- To describe the Australian beef industry and the issues that characterise it at present.
- Investigate why vertical integration may be a priority for the Australian beef industry.
- To research models of supply chain integration that exist in the beef industry in other countries, focusing on the following issues:
 - Why did the businesses choose to integrate and how?
 - Identify the differences in these models
 - Compare the risks involved against the relative returns
 - Identify the skills required to make an integrated model successful
- To investigate future trends, opportunities and threats that will influence the beef industry in Australia.

Chapter 1: Australian beef industry today

There is much discussion in the industry at present about how Australian beef producers need to focus on servicing 'niche' or 'high-end' markets. Many international competitors can produce beef far more cheaply than Australia, indicating a need to compete in terms of value, not price. Producers are being urged to respond to what the consumer demands and in doing so, review their role in the Australian beef supply chain.

Australian beef producers, as in almost all commodity markets, are 'price takers'. Their primary customers are processors, feedlots and the domestic supermarkets procurement teams, not the end consumer. By far the most important levers they have to influence profitability are cost of production (COP) and volume of output. They may run an efficient system on farm, but ultimately supply and demand cycles, primarily dictate the market price they will receive.

The Australian beef market has a history of volatility. The 2013/14 financial years saw some of the worst seasonal and market conditions ever experienced by producers. During this same period, it was widely reported that processors and meat traders were making record profits. Move forward to 2015/16 and producers enjoyed cattle prices not seen since the 1970's and processors cutting shifts and losing money on every beast they process.

This report illustrates how producers and processors in other parts of the world are trying to mitigate this volatility and move away from a model of commodity production. Progressive red meat businesses recognise consumer tastes are changing, not just in terms of what they choose to eat, but what drives their purchasing decisions. There is a distinct move away from the industrial food chain that has made food cheap, but consequently has removed the consumer's connection to product origins.

There has been much reported in the press regarding the split of meat retail dollars. In 2014, an Australian Broadcasting Corporation (ABC) report examined why it is so difficult to find out who is taking the profit in the meat supply chain. Further ABC reporting indicated farmers "often complain about the middle men arguing that processors are making a killing or the supermarkets...are taking the lions share" (Claughton, 2014). This report was published at a time when prices for Australian beef producers were desperately low, and processor margins high. While this is an emotive issue in Australian meat production, the

reality is that producer share of the retail dollar does not accurately represent farmer profitability.

Industry characteristics

The Australian cattle herd has fluctuated dramatically in size over its history (Figure 1), and this is a critical distinction of the industry compared with competitors.

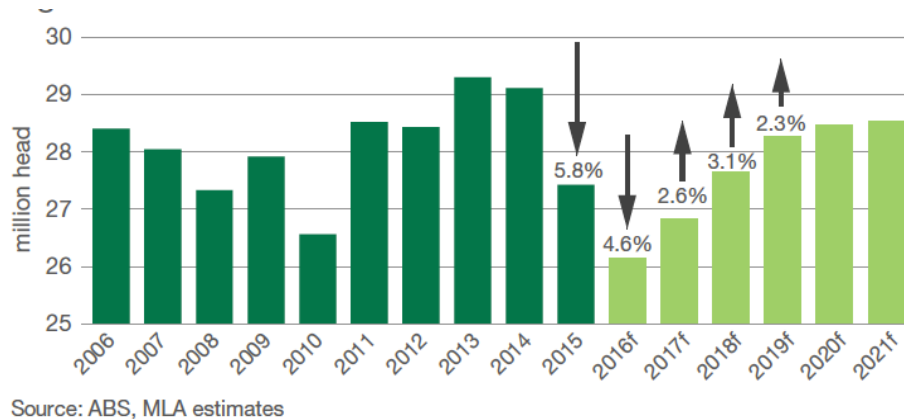


Figure 1: Australian Cattle Herd 2006 -2012 (Ben Thomas, MLA, 2017)

Producers in Australia, in response to changes in feed availability, will turn off or purchase stock to increase or decrease stocking rates, resulting in fluctuations in cattle supply. For example, widespread drought throughout 2013/14 resulted in a significant increase in cattle supply as producers rapidly destocked properties. This combined with the poor condition and weight of cattle offered for sale led to a significant decline in cattle prices. Despite this, producers in drought affected areas were unable to respond by withholding cattle from markets because pastures could not support existing stocking levels (ACCC, 2017).

Seasonal weather variations that affect cattle supply can also have important implications for processors in meeting customer commitments and maintaining plant efficiency. This variability has led to the feedlot sector developing rapidly in Australia over the last two decades, because it buffers cattle supply through varying seasonal conditions. Between 1992 and 2015, the share of Australian slaughter cattle sourced from feedlots rose from 8% to 30%. In the face of the variable Australian climate, the domestic feedlot industry provides a valuable market that helps underpin cattle values over the course of the production year (ACCC, 2017).

Export vs. domestic market

Australia is a net exporter of beef, consuming only 30% of production domestically. In 2015-16 Australia exported 1.17 million tonnes of beef, with the largest share to the USA (28.6%), Japan (23%), Korea (14%) and China (10%) (ACCC, 2017). The other large component of Australian cattle exports is the live cattle trade – 1.2 million head were exported in 2015-16, with the largest portion to Indonesia (46.2%) (MLA, Beef Facts 2016). The food service sector accounts of 40% of domestic sales and the remaining 60% is sold through retail (ACCC, 2017).

Vertical integration in the Australian market

Partnering, branding and supply chain innovation has been a focus for the Australian meat industry in recent years. However, the ACCC has stated; “vertical integration is not a significant feature of the cattle and beef industry... A number of firms are engaged in multiple parts of the beef supply chain, with varying degrees of vertical integration. Vertical integration can lead to efficiencies but in some circumstances, it may also raise competition concerns” (ACCC, 2017).

The last point referred to situations where large processors have partially integrated supply chains with additional interests in other supply chain elements such as feedlots. Australia’s two largest processors, JBS and Teys, have partially integrated supply chains, with feedlot (and in the case of Teys, breeding) operations in addition to processing facilities. Mid-tier processors and large cattle producers often have some degree of vertical integration, whether to supply beef for all markets, or particular lines of branded products. Some examples of these operations include: Australian Country Choice (ACC), Stanbroke Pastoral, NH Foods and Australian Agricultural Company (AACO), (ACCC, 2017). There a number of smaller integrated companies that are not captured in the ACCC data.

Chapter 2: Industry challenges

Export dependence

One key difference between protein industries in Australia is that the vast majority of chicken produced is consumed domestically as opposed to beef and lamb, both of which are hugely dependant on export markets. “Though total meat consumption in Australia has been stable since the 1960’s, at around 110kg per person per year – the type of meat has changed significantly with chicken and pork both now far outstripping beef” (Taylor and Butt, 2017).

In 2015/16, Australia exported 74% of its total beef production (MLA, 2016), with the ACCC reporting: “The Australian beef cattle industry is significantly exposed to international markets and as a result international markets are a major factor in determining prices for cattle and hence producer returns” (ACCC, 2017).

Australia is unique compared to other major beef-producing competitors in that domestic market is small. By weight, less than 22% of beef produced in Australia is consumed domestically whereas in the USA this figure is over 90% and in Brazil 82% (ACCC, 2017).

Trust and transparency

For integration in the supply chain to occur, transparency and trust between participants is critical. Unfortunately, there is a perceived level of distrust in the Australian beef supply chain at present, which led to an ACCC report into the red meat industry, which was published in 2017. The report investigated competition and fair-trading in the beef sector and the effect of aggregation in the meat processing market.

The report stated that there “is little up-to-date data available on the costs of processing in Australia” and that “anecdotally, Australian producers refer to the farmers’ share of farm gate returns in the United States as being markedly greater than in Australia” (ACCC, 2017). This report also notes that; “margins in the US industry tend to be more transparent than those in Australia where lack of appropriate data—at both sector level and firm level—makes it difficult to analyse pricing through the value chain”. This has led to calls within the Australian industry to establish a price reporting system similar to the USA. However, the report notes the difference between the Australian and USA industries and how the cost and complexity of collecting the data in Australia’s market may negate the benefit of introducing this model (ACCC, 2017).

Commodity vs. value

Would more transparency of price lead to more farm profitability and better management of risk? Perhaps beef producers have been too focused on price and who gets what share of the retail value, when the real questions they should be asking are 'what value they provide in the supply chain', 'what value to the consumer', and 'what the consumer is prepared to pay for it'. There is a real challenge for the Australian beef producer to understand the existing red meat supply chain. Commodity production does not demand that the producer take any further ownership beyond the farm gate, hence there is often less understanding of the broader supply chain.

Once producers learn more about the supply chain, they then need to understand how to take greater part in it. Australian producers can demonstrate they are very good at producing beef in some of the most challenging climatic conditions in the world, however are they good marketers of beef, can they manage processing and retailing, and do they even know what is involved in these areas? The truth is not many producers do have skills to manage functions further down the supply chain, nor do others in the supply chain have the skill to do what producers do. This is not to say that they can't acquire these skills, but there are other solutions like greater cooperation with supply chain partners.

Trends in value markets

Beef producers are farming in a social environment where the consumer wants to know more about their food and where it comes from. This phenomenon is driven by social conscience, increased access to knowledge about nutrition, and general interest in farm production through developing food culture. Media influences like TV shows 'My Kitchen Rules' and 'Masterchef' are making consumers think more about what is on the menu. In addition, a range of documentaries on food industries, such as 'For the love of beef', 'Supersize me' and 'Food Inc.', are encouraging consumers to ask why it is on the menu in the first place. In commodity production models, a product is traded solely on the basis of its price. Is that all that interests the consumer?

Chapter 3: Why integrate?

Producers perspective

The 2013 Rabobank publication, “The Future of Farming – rise of the rural entrepreneur” summarises the dilemma that faces farmers. “Generally, farmers prove to have low margins, even the lowest in the supply chain. As price takers, they generally tend to get squeezed in between highly concentrated input suppliers and off-takers. Farmers have to act, balancing freedom against chain co-operation” (Rabobank, 2013).

In the Australian beef industry, production has seen far less of this concentration than other parts of the supply chain. When looking at the Australian retail landscape (Figure 2) as at 2017, two of the major supermarket retailers’ control 68.9% of the domestic grocery market. Similarly in processing, the three largest companies account for more than 50% of red meat processing in Australia (PWC, 2011).

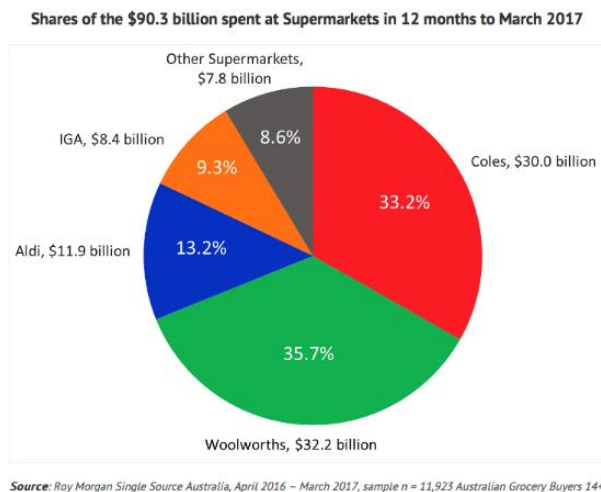


Figure 2: Supermarkets (Roy Morgan, 2016)

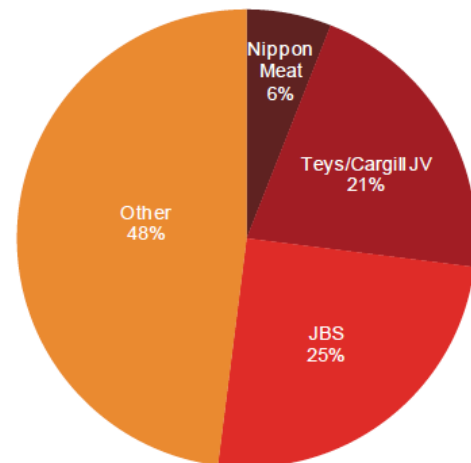


Figure 3: Processors (PWC, 2011)

Farmers face a dilemma. Do they continue on the commodity treadmill with only COP and scale as the avenues for profit growth or pursue another strategy? There is some good news on the horizon in the commodity market, with many larger food and agriculture businesses starting to deal with extended periods of scarcity of supply. They cannot run their businesses

without primary production inputs, so farmers in the future will find they are the suppliers of scarce products with higher prices (Rabobank, 2013).

However, even given this trend, farmers are still in a squeeze between consolidation upstream and downstream. In the face of this, one solution is to get bigger and more efficient, or in other words, scale. Larger farmers will have the leverage to get better terms from suppliers and customers and will maintain their operational freedom but will still remain price takers. Smaller farmers have the option to focus on co-operation, tailoring their production to the need of specific value chains. This aims to achieve the highest value for selling to specific customers in more integrated supply chains (Rabobank, 2013).

Processors perspective

Processing is one area the ACCC identified as already seen a degree of integration. It makes sense for a large meat packer to own or have an alliance with a major cattle feeder to provide a consistent supply to a facility. JBS owns a number of feedlots in NSW and Queensland, as does Teys/Cargill. NH foods operates a vertically integrated supply chain for Angus and Wagyu cattle bred on their property on King Island (Tasmania) before finishing at Whyalla feedlot and processing at their own facility (ACCC, 2017).

Craig Hickson, owner of Progressive Meats New Zealand, explained how his processing business focus on the requirements of customers. His relationship with customers like 'Atkins Ranch' is mutually beneficial, providing a flow of sheep into his plant and packaged product out, allowing him to focus on processing. No processor wants to operate on half shifts or at less than 100% capacity. They have wages to pay and invested capital to leverage, so in a market that may be shifting to scarcity of supply, there is significant incentive to partner with producers to fill this supply (Hickson, 2017).

Greenlea Meats in Hamilton, New Zealand use a flexible model where they rent out their boning room to customers to manage their own portioning, specific to their requirements (Greenlea, 2017). When moving towards conditions of constrained supply market, the necessity of partnerships will continue and deepen. As consumers demand more information at the point of retail, then retail will in turn pass this requirement to processors and on to producers.

Retailers perspective

In Australia there is no doubt the supermarket is the primary point of sale for beef. Retail in some form accounts for 60% of Australian meat sales, with the remaining 40% sold through food service. Even though Australia exports over 70% of beef produced, the domestic market is still very important.

Australian retailers are already using vertical integration in their supply chains. Today most supermarkets purchase livestock from farm, feedlots or via their own purchasing teams. They have relationships with major processors and suppliers to process centrally before distribution to stores. So, in effect, they have already outsourced most of their butchery to supply chain partners (University of Wollongong, 2010). A good example of this is Australian Country Choice (ACC), who is a major supplier of shelf-ready cuts to Coles Supermarket. They operate a number of properties across Queensland for breeding, backgrounding and lot feeding cattle to Coles' specifications and then process them at their facilities in Brisbane (ACCC, 2017).

With more competition in the retail space courtesy of Aldi and the expansion of 'Amazon Fresh' into Australia, supermarkets need more than ever to differentiate the products they are offering to get shopper loyalty. Trends in retail and food service indicate the extensions of beef brands beyond "provenance and production history of products to include references to sustainability and animal welfare practises" (Condon, 2016). That trend will drive closer links between supermarkets and their producer suppliers.

The same is true of international retailers, many of whom source beef from Australia, particularly those offering grass-fed products in the USA. The consumer buying grass-fed meat is making a choice driven by factors other than price. Though price is important, a shopper in a USA Whole Foods store (which has recently been purchased by Amazon) is presented with a range of information about the welfare and treatment of their products, including the Global Animal Partnership Standards (GAP) to make their retail decisions.

Supply chains vs. value chains

During numerous interviews and discussions over the course of the study, the term 'value chain' was used regularly. When describing a value chain, Michael Porter is frequently quoted and James Parsons spoke about this and the power in the supply chain, and the concept of supply chain leaders.

“A value chain is a chain of activities. Products pass through all activities of the chain in order and at each activity the product gains some value. The chain of activities gives the products more added value than the sum of added values of all activities” (Parsons, 2009). This is distinctly different from a ‘supply chain’, which can be described as a system of people and activities involved in getting products and services from suppliers to consumers.

The value chain concept; “creates a collaborative culture through incentivising communication, trust and interdependence rather than independence. The value chain typically is short with few chain partners. It is focused on a certain market or customer, and the sharing of ideas between chain partners facilitates co-innovation and product differentiation. The value chain philosophy is: How can we collectively grow the pie rather than compete for our individual slice?” (Parsons, 2009)

This sounds great in theory, but is very difficult to implement. “The ideal value chain shares power and profits fairly amongst the chain partners. Particularly if one of the chain partners is a retailer used to being the price-maker in the chain; taking the biggest margin, because they can. Subsequently many of the value chains held up as being fantastic models to follow are, while a lot more efficient, still retail-led” (Parsons, 2017).

This point was reinforced by businesses supplying supermarket retail chains but not under their own brands. Even those with brands struggled to encourage supermarket retailers to retain the use of their brand, and the resulting link with consumers.

Risks and rewards

Many integration models in this report have been driven by producers and processors being in the midst of poor market conditions, conditions that have threatened the very existence of their businesses. Some were created by opportunity, smart marketers realising there is a niche that they can fill by providing customers with a product that has authentic story. Others by supply chain failures, and also by a genuine need to change farming practices and in doing so sell their products on the basis of this. The following chapters illustrate some approaches to managing beef supply chains and the risks and rewards of each approach.

Chapter 4: Working with trusted partners

Atkins Ranch

Atkins Ranch is a company that supplies 100% NZ lamb direct to the USA market. The company delivers its products to market by managing supplier partners with varying levels of investment in the program. Their story focuses around “producing lamb the way mother nature intended” and leverages the imagery of NZ and its natural advantages to produce grass-fed lamb all year round.

The messages that underpin their brand are: 100% grass fed, no feedlots or grain supplements, no GMO’s, antibiotics or hormones and meeting third party audited GAP Step-4 standards for animal welfare. The Atkins Lamb brand is only focused on the USA market, using local terminology describing their suppliers as ‘ranchers’.

Sue and Bill Garland from ‘Rahiri Farm’ near Cambridge are one of Atkins Ranch suppliers. Aside from market premiums, one of their primary reasons for supplying the company is the guarantee of sale and kill space. They received a contract at the start of the season and the specifications that they needed to meet. They also communicated the supply volume that they could provide and when they thought those lambs would be ready to market. The Garland’s had been on a supplier tour to the USA and had seen the product on offer in Whole Foods stores and had a good understanding of the GAP standards that the market required and the processes that they needed to implement on-farm to meet these standards.



Figure 4: Bill and Sue Garland, New Zealand (Author, 2017)



Figure 5: Garland lambs at the processor

The Garland's lambs are slaughtered at a facility operated by Progressive Meats. Plant manager Hilton Bayliss, explained that producers like the Garland's are given forward commitment of kill space for their lambs, with a degree of flexibility to account for seasonal issues and that they maintained communication with their suppliers to understand any issue with supply coming forward to the plant. While price was not locked in until the final kill date, suppliers were aware of the premiums that would apply for supplying the program.

In the Atkins Ranch supply chain, Progressive Meat supplies a service that kills lambs and packages them to the required specification in a timely and cost effective fashion. Craig Hickson highlighted that the success of his processing business was its total focus on what customers want. One other key focus is the transparency with producers regarding kill and processing costs, which was well received by suppliers (Hickson, 2017).

In Freemont, California, James McWilliam, VP of Sales and Business Development for Atkins Ranch, explained that the company's first break into retail came when John Atkins first came to the USA in the 1980's. He had a chance meeting with a small grocer in Palo Alto who was part of the group now known as Whole Foods and the relationship formed then still exists today. James explained how drastically the retail situation has changed since then. Today lamb in the USA is a niche market, less than 1% of the supermarket meat cabinet. Atkins Ranch have a huge focus on promoting their recognisable brand, believing the future relies on their interaction with the consumer.



Figure 6: Atkins product in Whole Foods (Author, 2017)

James stressed the importance of Atkins Ranch branding and the need for their product to carry this branding at the point of retail sale. Selling boxed meat products make it difficult to do this, while moving to individual branded packaging enabled them to maintain a relationship with the consumer. They have changed traditional names at point of sale, for

example a 'loin chop' is a 't-bone chop' so the USA customer can recognise it and clearly display their GAP certification and non-GMO credentials.

Summary of the partner model

Value

Each element of these value chains focuses on their role and skillset without the additional capital required to own other parts of the supply chain. Partner models still offer premiums to producers for delivering a specific product that has strong value for consumers. A company like Atkins Ranch can leverage their supplier's story to form their brand, and have the meat processed efficiently and then exported. Their value is in market presence to sell this brand and manage the retail channels they supply. All this works without owning the component parts of the business, but importantly the Atkins Ranch company does co-ordinate them.

Branding

The Atkins Ranch brand and the way they communicate the value of their product is one of the keys to success. The brand leverages the clean, green image of NZ and creates a strong link back to the origins of the product and the farmers that produce it. The story they craft is strong and very recognisable. The producer tells this story of why their meat is tasty, nutritious and sustainable which this is key in differentiating their product from others on the supermarket shelf in Whole Foods.

Shared vision

Commitment to the partner supply chain is critical as it often holds the model together. If participant producers are only focused on the short term and the 'best price' on the day, then they will not commit to supply and do not belong in the value chain.

Risks and rewards

Partnering with trusted suppliers is a lower risk model for all supply chain participants. Each has a lower capital requirement, not needing to own other parts of the supply chain. However, this can reduce commitment to the supply chain, as each has less invested in other operations. This model is flexible - there is minimal change to participant's current skill sets and if one of the partners should fail, then another can be found to replace them. Ultimately though, the producer is still a price taker and this model does not significantly mitigate the risk the climate/market poses to the business.

Chapter 5: Owning the supply chain



Figure 7: Callicrate Beef and Ranch Foods Direct (Author, 2017)

Callicrate Beef, Colorado

Callicrate Beef is a good example of a fully integrated supply chain, taking animals from the paddock where they were born, through to the product offering on the retail shelf.

Owner Mike Callicrate is vocal about the diminishing returns to the producer and cattle feeder, pointing out that in the USA there is a disparity in the supply chain around return on equity. Over the last six years, retail grocers enjoyed a 21% return on their equity, the meat packers 17% but farmers and ranchers only around 0.54%. (Callicrate, 2011). He believes that there is no longer any competition in the market due to the concentration of ownership of processing by the big packers, Cargil, Tyson and JBS.

Mike Callicrate has built the entire Callicrate Beef supply chain himself. The business owns a retail store, value adding plant, an abattoir, a feedlot and grazing land to breed on. It produces a grass raised and grain finished product to ensure consistency of eating quality. This is coupled with an on-farm slaughter facility, guaranteeing animal welfare is well managed. To consistently maintain the retail offering, the company does have to source cattle from other breeders that follow their protocols. Callicrate Beef then feeds and processing them through their own facilities.



Figure 8: Outside the mobile plant (L) and inside the processing facility (R) with Mike Callicrate (Author, 2017)

The processing facility is small scale and typically slaughters around 20 head per day. The killing and bleeding of the animal is done outside the facility in the enclosing meat room. Figure 8 shows where the primary processing takes place and the hides are pulled. The bodies are then hoisted into the mobile facility where the offal is removed and the carcass is split before moving into the chiller. Chilled carcasses are transferred to the Ranch Foods value adding plant, where the bodies are portioned and packaged for retail. The retail shop sells beef and the pork from Callicrate farm, but also milk, cheese, vegetables, eggs and chicken from other suppliers in an attempt to offer a one-stop shop for their customers.

Colorado Springs offers an excellent local market with a population of 450,000 people. It is only an hour and a half drive to Denver, one of the fastest growing cities in the USA. This is another key to the success of this model, allowing their brand to keep a local story and still have access to a large consumer base. They also have a resident chef utilising one of their chiller rooms to produce a brand of pies, using Callicrate meat, and other value-added products like bone broth.



Figure 9: Callicrate beef, aging at value add centre (Author, 2017)



Figure 10: Branded Callicrate meat at retail (Author – 2017)

The key message is: “It’s not what we do that makes our beef so good, it’s what we don’t do” Their products do not use HGP’s, no solutions or additives – reflected in their slogan – “Nothing added – just real meat”. The long-term goal of Callicrate Beef is not to gain efficiency through greater scale. Ideally, Mike wants enough cattle to leverage his investment in processing and retailing, then for other local hubs to be encouraged in nearby states to replicate his model and provide more competition in the marketplace.

The business was originally about feeding cattle, but Mike has learnt the skills required to process and market his meat. Though he has the ability to cross subsidise his business units, he maintains that they must all be cost competitive. However he does say given his experience with managing other elements of the supply chain, he still believes it is the cow/calf business that holds the majority of the risk in his supply chain. Mike regularly reports his position on the meat industry and its issues in general on the blog, “No Bull Food News” and whether readers agree with his views or not, he has taken the destiny of his business into his own hands by taking his product direct to the consumer.

US Premium Beef



US Premium Beef (USPB) is a large, USA based producer owned marketing company and a good example of a partial ownership model taking ownership of all elements of the supply chain, excluding retail. Cattle producers with a common desire to create a vertically integrated beef company founded USPB. They wanted a business model that would offer them; market access, information transfer, true value-based pricing and the ability to sell meat and meals instead of cattle.

Their belief was that vertical integration would benefit producers, processors and consumers by providing a more consistent supply of high quality beef (USPB, 2017). Its membership is comprised of all segments of the industry; backgrounders, commercial cow/calf producers, custom cattle feeders, farmer feeders and genetic suppliers.

The business began as a closed co-op in 1997, with members committing funds to purchase an interest in a packing company that later became known as National Beef. USPB currently retains a 15% share of this company and a seat on the board. So, in essence, the unit holders in USPB are part owners of the processor, National Beef. It has grown significantly and now markets over 700,000 cattle per annum, providing 25% of the four million cattle that National Beef processes annually (Gardiner, 2017).

USPB is a Limited Liability Company with Class A and B units that can be bought and sold separately. Class A units give their owners the right and obligation to market one finished animal per unit, per year. Class A units receive 10% of the allocations of profits and losses and cash distributions paid by USPB. This is a key element to success, allowing for true value and risk sharing across the supply chain by delivering producers a share in the added earnings of National Beef.

Trading of units is valued by private negotiation between buyer and seller, with a third party used to register and trade the holding. The board reviews all new memberships and approves them, guaranteeing that all members are on the same page in terms of values and direction of the business. Common vision is key to a successful supply chain.

Mark Gardiner, current chairman and one of the founders of USPB, said the underlying success of the company is the producer obligation to provide cattle to the business. No matter what transpires in the market, if Class A shares are owned, cattle must be provided, guaranteeing supply of cattle to the works. Producers also have the option of leasing their delivery rights to others to fulfil their obligation, giving them flexibility if they cannot hold or procure cattle. This also gives other businesses the ability to participate in the program if there are no Class A units available. Class B units are also available, not tied to delivery of cattle, providing an opportunity for investors to take a stake in the company (Gardiner, 2017).

National Beef has processing plants in Liberal and Dodge City, Kansas. The business also has portioning plants in Pennsylvania and Georgia; hide processing plants, a freight business and an international export division. National Beef's products are marketed under numerous brand names, both domestic and international, and it markets fresh, frozen and case ready products. Though the USPB brand is not on the final product, its ownership share means members have a stake in the brands that National uses to differentiate its high value choice and premium products.

Overall the producer benefits from ownership and a share in the profits of the processing business. They gain access to individual carcass data, to feed back to their production businesses and get incentives to produce cattle that fit industry competitive grids and a reward for quality. Historically they gain an average of \$70-90 per head premium for the cattle they put through the supply chain.

The processor gains a consistent supply of animals and the quality based payment system drives producers to provide them with higher quality cattle for their supply chain. With a guarantee of quality lines of cattle, they can establish differentiated product offerings to the consumer.

The original unit holders of USPB took significant risk investing in a processing plant, and their reward is a share of the profits of this business. This model does allow producers to supply a branded product, but they do not retail those products or control the brand.

Summary of supply chain ownership models

Guarantee of supply

In models where the business owned the entire supply chain, there was an implicit guarantee of supply no matter what the market/environmental conditions. In the case of USPB, the guarantee of supply held the supply chain together and gave their processing arm a market advantage.

Adaptation

Adaptability is a key issue for beef businesses who choose to own the supply chain. Many of the businesses were in niche markets. The risk is that as these markets succeed more enter the niche and there is constant trend towards commoditisation. (King, 2017)

Skills

Callicrate Beef demonstrated how important it was to have “the right skills for the job”. It was evident that in a wholly owned business good skills mix is needed to manage all component parts of the business. Mike Callicrate is charismatic and a natural salesman. His experience in the lot feeding business meant he was very aware of his cost of gain and had a very good handle on his COP. This then transferred to his management of the rest of his business, where he was very mindful of the cost efficiency of each part of the supply chain. He employed professionals to manage the value-adding, wholesale and retail components of the business.

Risks and rewards

Owning the supply chain gives the operator the greatest level of control over their business. The owner has a direct link with the consumer and can get direct feedback from them. In this model they have the ability to set the product price, however this is contingent on the value of their offering and must be within market parameters. Innovation is critical to maintain value and margin.

Though they have more invested in the business, which is a risk, this investment enables them to reduce their market and environmental risk. By owning the whole supply chain, they preserve even more of their margin in times of adverse seasonal conditions.

This model requires the most skill to manage along all components of the value chain. To own all elements of the supply chain requires a large upfront capital investment and in making this investment, most need a return on this capital, reducing financial flexibility.

Chapter 6: Contract it out



Figure 11: Country Natural Beef (CNB – 2017)

Country Natural Beef

Country Natural Beef (CNB) is a producer driven alliance that markets 50-60,000 head per annum. It is essentially a co-operative of cattle breeders who, using a minimal management structure, manage the feeding, processing and marketing of their own meat products.

Doc and Connie Hatfield started the company in 1986 in an effort to look beyond the farm and use a holistic approach to the entire meat supply chain. The motivation was to move out of the commodity market (which at the time was depressed) and go direct to retail to create more pricing stability and influence the final retail price. The overall goal of the business though, was sustainability. Their aim is for member farms to maintain the environment and six to seven generations of producers into the future (Davies, 2017).

The business is very minimalist, with three key business areas: marketing, finance and production. These functions are contracted back to the membership, so the group only has a limited number of direct employees. These employees are members, who hire their own teams to achieve the objectives of the business. They also have a commitment to a lean business with few assets; they rely on relationships with their suppliers to fulfil the value chain. CNB has never had to go to the market for capital or debt to fund their operations.

The beef is feedlot finished with the partner feed yards being paid on contract basis. Processing is also contracted out, and paid on a fee for service basis. All cattle are processed at either; AB Foods (Washington Beef), Brush Meat Processors or CS Beef. Wes Davies, Regional Director at CNB, indicated they did need to hit a certain level of scale to maintain space and a preferred relationship with their processors, of around 100 head per kill. CNB

rents its own freezer and chiller space from third parties, and then uses distribution companies to get its product to the point of retail.

CNB has essentially evolved into a meat company as they do all the marketing of the product when it leaves the plant, and have strong supply relationship with retailers like 'Whole Foods' and new entrants 'Blue Apron' - in fact over 60% of their meat goes to these two customers.

The CNB product is not strongly branded at the point of retail in this market, but the butchers and staff at the meat counter are educated as to where the meat comes from. In the meat cabinet at Whole Foods, it is sold as 'pasture raised'. They also supply an Oregon Country beef line that takes the remaining 40% of their product that is branded and is generally sold within the state of Oregon. At this time there are no plans to set up any direct to consumer channels and they did not believe in having their own retail presence. CNB believed it was better to partner with retailers who know their business to get their product out to a broader market.

CNB uses a unique cost of production measure to allow them to negotiate a retail price with their customers. This is a very transparent process and was actually suggested by retailers when they first established CNB to apportion margin and cost to the different elements of the business. CNB set about measuring in detail farm cost of production to build a 'sustainable' price. This is then blended with a market component to the price to allow the retailers prices to remain competitive in the broader retail market.

This was not without its difficulties, as although they could easily account for feed yard and processing price, they needed a way to measure and average cow/calf operators COP. This is unique to any of the supply chains studied – although its model tended to favour larger producers, it is a realistic approach to measure and then average the COP differences between different members. Above all it is transparent and is reviewed and shared openly with their customers.

Unlike other models, CNB does not require ranchers to buy an interest in the business, but rather to commit to supply and become active in the membership group. One unique part of this membership is a requirement for CNB ranchers to do least two days of in-store

promotion every year with their retail customers to link the consumer to the entire supply chain. This also enables members to participate in building the brand.

Members of CNB receive timed payments over the production year, with the first instalment paid within three days of slaughter of the animals, the next 150 days after the kill date and the final instalment at the end of the financial year – effectively a pool payment. This essentially breaks down to 80% at kill and 20% staggered over the next 12 months. This also commits producers to the program and they are incentivised by a grid-based payment system to provide quality cattle but also incentivised financially to supply cattle during months of difficult procurement, like January to December. The group has a diverse enough membership across the north-west to provide year-round supply, though as mentioned there are bonuses paid to incentivise supply in certain months.

CNB had a production protocol that is not easily replicated in the market. Their brand also relies on the producers having the same approach to managing their on-farm production system and ethical handling of their animals. CNB product is hormone and antibiotic free, and in terms of welfare is GAP 4 certified, backed by audits. The approach to generational sustainability, appeals to both the suppliers that deliver cattle and to customers who value their food coming from sustainable production systems.

Summary of contractual models

Product ownership

The key difference between contractual models and the partner models in Chapter 4 is that producers retain ownership of their products through to the point of sale to retailers. This fact is a key strength of this model, it allows for more influence over the final price of the product.

Information is power

In the supply chain, information is power. One relative advantage identified by the chicken industry in their integrated supply chain is 'market signals move quickly in the supply chain, as do advances in farming and processing' (Australian Chicken Meat Federation, 2011). The contracted model allows the owner of the supply chain the ability to communicate change at both the production and retail ends of the business. This allows them to react to changes in consumer behaviour, and to further refine their offering to their customers. Similarly, they

can react to competitor behaviour and add elements to their brand at the point of origin on farm, something the traditional supply chain is much slower to communicate.

Transparency in the supply chain

Ownership of the raw and final product delivered to the customer has its advantages. In the example of CNB, they have a very open model to communicate with their retailers and encourage this. The COP model allows them to arrive at a price that allows their ranchers to be profitable, with enough adjustment for the retailers to remain competitive and leverage their unique story.

Transparency is important not only with the supply chain but also with customers - an excellent example of this is 'Polyface Farm' based in West Virginia. Arriving at the Salatin's farm on a Wednesday morning enables you to witness the entire chicken slaughter process, before going on a comprehensive tour of their integrated farming operation, raising everything, beef, chicken, pork, turkeys and even rabbits (Salatin, 2017).

Risk and rewards

Though continued ownership of product is a reward of this model, it is also a risk. These businesses rely on being able to sell all of their products through their partner channels, and although they can contract the processing, they do not have as much influence over the point of retail. They also hold their own stock. This model rewards the producer with more margin for their primary product - though they pay for the processing and handling, they have far more influence in the retail price of their product. Finally this model is flexible, without owning other assets (e.g. processing) beyond their farms – as Wes Davies (CNB) explained their supply chain could be shut down tomorrow and their stock liquidated on the commodity market without significant cost to the participants.

Chapter 7: Co-operatives

Alliance Group

This report investigated two co-operatives, both in the lamb industry. Alliance Meats, and its Chair Murray Taggart, explained the operation of New Zealand's biggest sheep meat processor and fourth largest processor of beef.

Formed in 1948, Alliance is 100% farmer owned with over 5,000 farmer shareholders, turning over more than \$1.4 B NZD per annum. Alliance takes responsibility for production through to marketing, with a goal to provide attractive returns to its farmer shareholders. Farmer members are paid through livestock pricing and a distribution of the cooperative's profits. Like the USPB model, farmers receive a dividend from processing and marketing operations, giving them a greater interest in the supply chain and a wider market for their products.

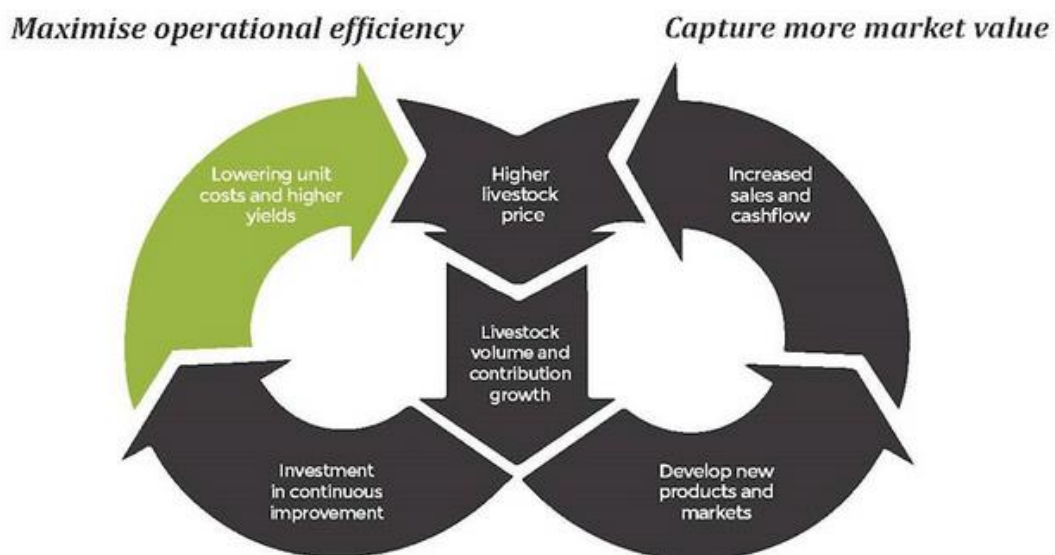


Figure 12: Alliance co-operative model (Alliance Group, 2017)

Alliance allows members the scale and integration to participate in markets and product offerings that they would have been unable to on their own. Alliance exports to over 64 countries, delivering around 15% of the world's exported sheep meats (Alliance website, 2017). They provide products from wholesale carcasses through to retail packaged goods and have recently added an online store for domestic customers.

Alliance uses innovative imaging technology to measure carcass yield and helps farmer members to understand what global markets want. In addition to export and domestic retail markets, Alliance also has a direct-to-consumer offering in NZ. In the context of being a vehicle to deliver extra value to its farmer members, the cooperative model does this well, as outlined in the summary section below.

One of the key benefits of the co-operative model is that it should guarantee a supply of stock to the abattoir. However this is not always the case. Many co-operative members still sell outside of the Alliance supply chain even though they are members of the co-op. An estimated 85% of their beef and lamb does come from members – but members do not have a guaranteed commitment to supply the cooperative.

Summary of the co-operative model

Scale

Alliance offers its members the scale to take their products to a large domestic and export market. With large-scale export capability, Alliance sells products in more than 65 countries. This capability is crucial for farmers in NZ who export over 95% of their production.

Guarantee of supply and sale

Members have preferential access to processing plants with measurements of yield, rewarding them for the quality of product that they supply. It rewards them with a share in processing profits, and offers kill space at times of seasonal oversupply. Similarly, the processing plants have consistency of supply, and some forward visibility of the sheep and cattle numbers that members have on hand.

Risks and rewards

The Alliance brands leverage the clean, green, grass-fed image of NZ's farms in marketing lamb and beef. These branded products are sold to international distributors; the primary customers in most export markets, not direct to consumers. In the domestic market consumers do have a direct relationship with the Alliance brand, but this accounts for a small portion of their overall production

Co-operatives like Alliance offer a share of the profits of the processing side of the business to members, however the majority of the producer's income is received on delivery. The

additional 'pool' payment portion of total income to supply the co-operative is still only a small component of total producer income - up to \$5 per head in the case of Alliance.

Despite the lure of ownership that the modern co-op inspires, many members still sell outside the network. Scale appears to be the enemy of the modern co-op, not in terms of operational size but scale in terms of ownership. In a business with over 5,000 individual member shareholders, it is difficult to represent all the values. "Many co-operatives started from a committed group of suppliers that had a shared vision for the business; the challenge is maintaining this focus" (Harrison, 2017).

To succeed, co-operatives need a supplier base that understand their profit is not just based on product into the plant, but really product delivered further down the supply chain to the consumer.

Chapter 8: Market opportunities and threats

Consumer trends – the grass-fed market

As consumers learn more about where their food comes from, there is a growing segment seeking what they perceive to be a more 'natural' product. Though intensive animal production (grain-fed) is efficient and does achieve a consistent product outcome, there is a negative public perception around these systems, which has led to an increase in demand for 'grass-fed' meat. In the USA, one of the world's largest meat consuming countries, 'grass-fed' beef only accounts for 4% of all beef consumed. However, in the face of a decline in USA national beef consumption of 2-3% annually, the grass-fed market is estimated to be doubling every year (Cheung and McMahon, 2017).

This is an exciting market for the Australian producer, as many already run businesses underpinned by grass production, however there is some lack of clarity on the definition of what grass-fed actually is, an issue that has been identified in the USA. "The USDA's allowance of partial grass-fed claims (e.g. 50% grass-fed) and the absence of a requirement for on-farm inspection for grass-fed claims mean that not all beef sold with a grass-fed label necessarily follows these production standards" (Cheung and McMahon, 2017). Currently, animals fed 'grass pellets' in a feedlot can be marketed as grass-fed beef to the consumer. (Balkan, 2017) – clearly there is a critical need for branding standards in this market.

It is claimed that grass-fed beef is better for human health, provides better animal welfare, benefits the environment and climate and has better taste and flavour. (Cheung and McMahon, 2017). It is these claims that are winning over consumers. White Oak Ranch is producing a product that appeals to this market. Will Harris used the 'ruminant advantage' to market his product - what creature other than the ruminant can convert a relatively abundant supply of grass into a dense energy source like meat protein? (Harris, 2017).

In the USA beef supply chain, over 97% of animals slaughtered are grain fed. The aggregation of operators in the market (four companies buy more than 80% of the cattle sold in the USA), means grain-fed beef is relatively cheap to produce when compared to grass-fed products. That results in the consumer paying an estimated 70% price premium for branded grass-fed over conventional beef (Cheung and McMahon, 2017). One very attractive aspect

of the grass-fed market is that consumers are paying a premium of not just primal cuts. A grass-fed hamburger, for example, will be priced 25% above a conventional alternative (Matsumoto, 2017).

Though USA producers are looking to move into this space, their momentum is slow and exporters such as Australia have a significant price advantage to the domestic supply. Australia has some competition in Uruguay, Brazil and NZ, all of which have some advantages with their climate for producing grass fed beef all year around. The grass producing areas studied in the Cambridge (Waikato) region of NZ were underpinned by high rainfall, good soil and proximity to inputs and mild temperatures, the likes of which are very difficult to find in Australia. Brazil has vast production areas with high rainfall, good soils but not the access to inputs and markets that NZ does.

The changing face of retail

The way food is purchased is changing, with the supermarket model that has dominated the Australian food retail industry an example. In 2017, Amazon announced it would launch retail operations in Australia, and so just as that company's online sales have transformed the retail and the consumer electronic markets in the USA, they will now likely transform the way Australians purchase food. In the USA this is happening - "while around a quarter of USA households currently shop online for groceries – up 20% from three years ago – more than 70% will do so within ten years" (ALBA, 2017).

Amazon Fresh was launched in the USA in 2007 to allow the company to deliver fresh produce through its existing infrastructure. Though it has not taken the market by storm, it signalled their intention to get into fresh food. Amazon realised the difficulty in delivering fresh food with the potential to spoil quickly, and has now moved to reinvent the grocery store. 'Amazon Fresh Pickup' was launched in March 2017 to allow customers to order groceries online and then drive to an Amazon store to collect them (ALBA – 2017).

Other retailers like Walmart can do this already, but where their order takes two-to-four hours to put together, Amazon can do this in 15 minutes. Amazon's purchase of 'Whole Foods' supermarkets in the USA for \$13.7 billion USD is significant, as the company can now expand this model out in 431 Whole Foods stores in the USA. "What we are seeing today is the first step in Amazon's strategy to acquire locations that get closer to the consumer" (ALBA, 2017).

What this may offer businesses in Australia is the ability to supply Amazon directly and get access to its consumers. It is already calling for Australian business to sign up to its marketplace, claiming that this will empower small business using its delivery technology. Likewise, other entries into the grocery market, like delivery company Blue Apron, will promote more direct connections with beef producers.

Growing demand – rise of the Chinese middle class

Many conversations about markets for Australian products today makes reference to the opportunities in China and the growth of their middle class as a target market. Homi Kharas, from the Brookings Institute states that, “About 140 million are joining the middle class annually and overwhelming majority of new entrants into the middle class - by my calculations, 88% of the next billion will live in Asia” (Kharas, 2017).

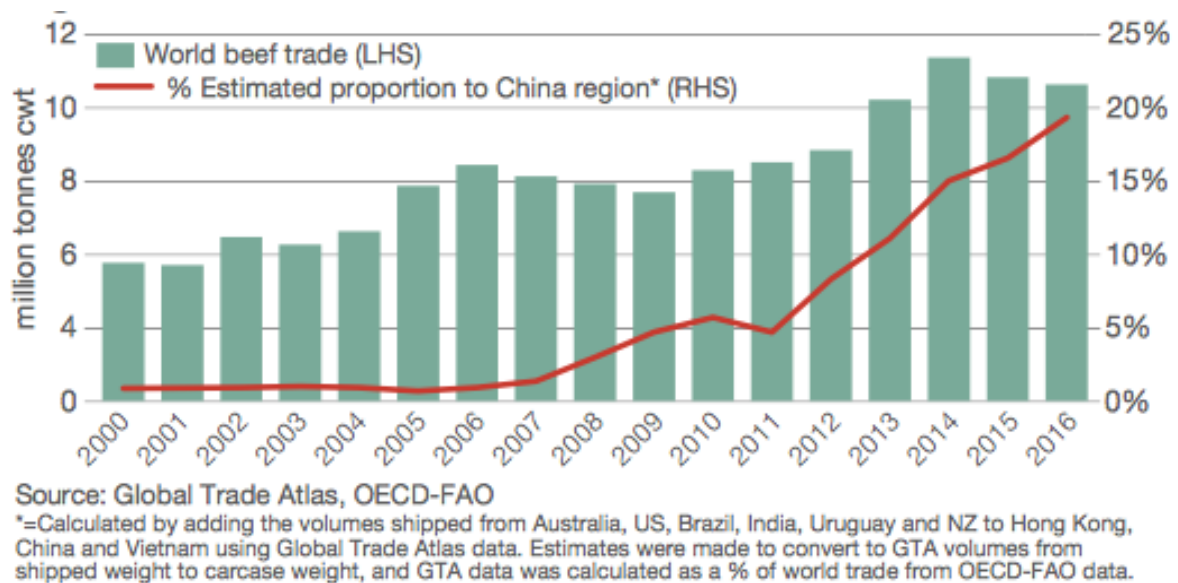


Figure 13: Influence of China on the world beef trade. Global Economy and development working paper 100 – “the unprecedented expansion of the global middle class – an update” (Kharas, 2017)

This is already having an effect on world beef trade as this new middle class gets a taste for red meat. What is not clear is who will supply product to this growing market - there is already a huge amount of competition in this space. The USA has recently been granted further access to China for its beef exports and Brazil is already a major supplier into this market. For Australian business though, there is considerable advantage to be gained from our already favourable industry image. Figure 14 demonstrates the positive image of Australian beef in the world and this can be leveraged to enhance and gain market share. Recent health scares in China only reinforce how important food safety is in this market.



Figure 14: Perception of beef quality in the international market. Rabobank – “Brazil: looking for new business – challenges and opportunities” (Fontes, 2017)

When looking to supply a market like China, trade access is important, as is a country's attractiveness as a trading partner. The biggest enabler/barrier for agricultural innovation and development is not where the best land/soil is - nor how much rain falls there but how stable the political situation is (Rabobank, 2013). This is a huge advantage for Australian products, and no matter what supply chain model is used, this must be part of the selling proposition. One only has to look at Brazil, the third largest exporter of beef in the world, to see how their political instability has rocked their industry in the last 12 months (Fontes, 2017).

Other meat proteins

Red meat is an accepted protein source but is viewed as costly to produce in terms of economics and resources. When comparing the meat sectors in terms of relative efficiency, chicken and pork lead the way.

The chicken meat industry in Australia is vertically integrated, which has driven industry productivity. Consolidation in the chicken industry has been ongoing. In 2014-15 there were only 750 broiler farms in Australia with each farm running 120,000 chickens at one time. These growers do not own the birds or the feed – these are owned by the processing companies. More than 95% of the chicken grown in Australia comes from just seven

privately owned companies, the biggest of which are 'Baiada' poultry and 'Inghams', enterprises which make up 70% of the market. (Australian Chicken Meat Federation, 2011)

It is clear that from a breeding perspective, the chicken industry has accelerated genetic progress far more quickly than beef. In 1975, it took 64.1 days and 4.66 kg's of feed to take a chick to marketable size, in 2011 it took 35 days and only 3.4 kg's of feed to achieve the same result. In respect to water and land, intensive chicken production is less resource hungry than beef (Australian Chicken Meat Federation, 2011).

Much can be drawn from the fact that in every developed country in the world, chicken is the most consumed meat protein – it is cheap, consistent and native to many diets already. With chicken being so efficient to produce, how can beef compete with it in the protein market?

The fact chicken is both cheap and consistent means that it is hard to differentiate, and to demonstrate to consumers that they should pay more for it. Chicken is the ultimate commodity, and as mentioned previously, beef is not going to compete with chicken on price, so it must compete on other values. John Butler, CEO of the Beef Marketing Group stated that red meat's one unique advantage is a distinct flavour, something many other white meats do not possess.

The intensive nature of chicken production means it is hard to craft a compelling natural, grass raised story around chicken meat. In addition, little chicken is exported from Australia. With domestic growth limited, the only option for the chicken sector will be to take market share from other meat proteins. This is a risk for Australian beef but it has the advantage in being able to be exported in chilled form and has a longer shelf life, and can actually improve in eating quality with age.

Conclusion

There is no doubt that to take more value in the supply chain, producers need to take more ownership of their product beyond typical business boundaries. There are pros and cons for the different models of ownership, partnering and contracting, but ultimately beef producers must decide what best suits their skills and where they want to sit in the supply chain.

For a 'value chain' to be successful, it must demonstrate to consumers that it is not selling a commodity product sold only on the basis of price. There are viable options for beef producers to integrate in the supply chain and move away from the commodity model. The decision to purchase beef in the future will be made on its value, because it is not cheap to produce when compared to other proteins. If a beef product is unique in the protein market and consumers view it as such, then it can sell at a premium. If differentiated on value, beef is further insulated from price changes at the retail level – because unlike the commodity model, producers have greater influence on the price received.

A successful beef value chain, operating in either a domestic or export market, must ensure that it stays strongly connected to the consumer. For consumers today, a food purchase is not just about what they eat but how they want that food produced. This, along with quality, determines what they are prepared to pay for it. Consequently, the power in the supply chain resides with who has the relationship with the customer, as this is key to the ability to exert control over the price received.

Export dominant beef industries like Australia have more complex issues around their proximity to the customer. Export value chains are far more difficult to establish and manage than in countries with strictly domestic beef industries. When exporting, there are cultural differences to navigate, language barriers, supply chain logistics, and political issues - all of which make it harder to communicate with customers directly and demonstrate value in the supply chain. Almost all of the businesses investigated had a large domestic market to supply, with only New Zealand facing a similar challenge to Australia.

At the start of this report, the author highlighted that one of the greatest risks to the Australian beef producer comes from climate volatility. Though its effects are felt throughout the supply chain, the direct effects are reduced closer to the consumer. So does

a value chain better manage climatic risk? Depending on the model chosen and the level of integration, it can.

In a model where producers receive a share in returns of the processing business through ownership, this can offset the losses that they may incur on farm as prices drop. If the whole supply chain is owned, more of the margin may be preserved in times of adverse seasonal conditions.

Does integration remove risk entirely? The conclusion is no. This is never possible when dealing with nature and a perishable product. Ultimately, Australian beef producers can reduce the overall risk in the supply chain by sharing it, managing it and owning it.

Recommendations

1. Determine what level to play in the beef supply chain and if there is the desired and skill set available to change what is currently being done.
2. Assess what markets the beef is currently being sold, and how well the current production system suits that market's specifications and needs.
3. Beef supply chain participants need to identify their current exposure to the market, as well as the climate risks, and whether these need to be mitigated.
4. Beef producers should research and investigate potential alliances that already exist in the industry and whether these models and associations could be developed further.
5. Understand final consumers requirements for beef, and how premiums are being achieved for supplying a differentiated product.

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Plain English Compendium Summary

Project Title:	Successful Models of Vertical Integration in the Beef Industry. Rewards, risks and opportunities for value chain creation in the Australian beef industry
Nuffield Australia Project No.:	1622
Scholar:	John Finlayson
Organisation:	Pointsfield 1443 Chandler Road Armidale, NSW 2350
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Objectives	<ul style="list-style-type: none"> • To describe the Australian beef industry and the issues that characterise it at present. • Investigate why vertical integration may be a priority for the Australian beef industry. • To research models of supply chain integration that exist in the beef industry in other countries, focusing on the following issues: <ul style="list-style-type: none"> o Why did the businesses choose to integrate and how? o Identify the differences in these models o Compare the risks involved against the relative returns o Identify the skills required to make an integrated model successful • To investigate future trends, opportunities and threats that will influence the beef industry in Australia.
Background	In 2004, I left corporate life in the USA and moved back to our family property near Armidale in Northern NSW. My family has raised grazing animals in the New England region of NSW since 1860 and I hoped to continue this tradition. I also believed livestock farming was a sustainable and responsible way to produce food for the future and that meat is a valuable part of the human diet.
Research	This report initially examines the fundamental factors that determine the present nature of the Australian beef industry: climatic volatility; export dependency; competition and distrust; and consumer consumption trends. Secondly, the report investigates international models of vertically integrated red meat value chains that have successfully responded to the changing landscape of food culture. It explores businesses that: own the entire supply chain from production to retail; work with trusted suppliers to add value to all partners in the supply chain; develop alliances to market their differentiated products; and cooperatives where members work together to benefit producer and processor.
Outcomes	There is no doubt that to take more value in the supply chain, producers need to take more ownership of their product beyond typical business boundaries. There are pros and cons for the different models of ownership, partnering and contracting, but ultimately beef producers must decide what best suits their skills and where they want to sit in the supply chain.
Implications	Export dominant beef industries like Australia have more complex issues around their proximity to the customer. Export value chains are far more difficult to establish and manage than in countries with strictly domestic beef industries. When exporting, there are cultural differences to navigate, language barriers, supply chain logistics, and political issues - all of which make it harder to communicate with customers directly and demonstrate value in the supply chain. Almost all of the businesses investigated had a large domestic market to supply, with only New Zealand facing a similar challenge to Australia.
Publications	Nuffield Australia National Conference, Darwin, NT 2017