
Australasian Agribusiness Perspectives

2022, Volume 25, Paper 1

ISSN: 2209-6612

Trends and Opportunities for the Pet Food Industry in Australia: A Value Chain Perspective

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Abstract

Australia has a well-developed pet food industry, mainly resulting from the pet-friendly culture and high pet ownership rates. However, due to the saturation of the market, growth in value has been stagnant for the past decade. Many reasons exist for this situation, including the changing nature of the pet-owner relationship, food safety concerns and an obsession with providing nutritional diets. These trends may account for the limitations on industry growth, but they also can be considered as opportunities for the Australian pet food industry, indicating the possibility of value adding along the value chain. The broad aim of this study is to build insight into the Australian pet food industry and to evaluate value chain upgrading options. To achieve this goal, a value chain analysis is adopted. It evaluates the product flow, information flow, and value flow within the pet food supply chain, unveiling potential opportunities and possible actions for the industry in the context of the current Australian and global environment. The results of this project add to the understanding of the Australian pet food industry and may provide feasible solutions to stimulate market growth.

Keywords: pet food, value chain, food safety, upgrade options

Introduction

Australia has one of the highest pet ownership rates in the world. Over 60 per cent of households in Australia own a pet, higher than the United States (57 per cent), the United Kingdom (40 per cent), and many other countries around the world (Animal Medicines Australia, 2019). Within all the categories of expenditure on pets, pet food is the highest, representing approximately 30 per cent of all ongoing expenditure. Therefore, the Australian pet food industry is a substantial market. According to Mordor Intelligence (2019), it is the second-largest market in the Asian Pacific region and reached a value of \$2.6 billion in 2020 (IBISWorld, 2020).

Dog food and cat food are the two major types of pet food in this market, accounting for approximately 90 per cent of the total, and they are available in a number of product forms. The products can be segmented by different categories, such as dry food, wet food, treats, and others. Some of these product types are shown in Figure 1.

Furthermore, they also vary in pricing, including economic, premium, and super-premium products. Dry food, a primary pet food product, usually provides complete nutrition for animals. It is typically

made from ingredients such as grains, meat, vitamins, and minerals (Case et al., 2011). The pet food companies either process the ingredients themselves or collaborate with other processors to produce pet food products. The products are then distributed by traders and sold in various channels, usually supermarkets and pet shops (Animal Medicines Australia, 2019). The pet food market is mostly dominated by large multinational players, including Mars Wrigley (30 per cent), Real Pet Food Company (19 per cent), and Nestle SA (Purina) (16 per cent). Colgate-Palmolive is another major player.

Figure 1. Pet food product segmentation and types



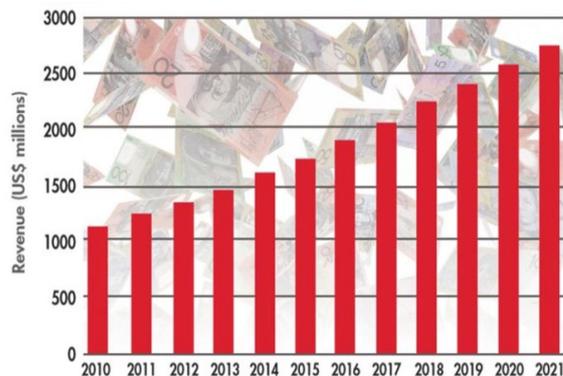
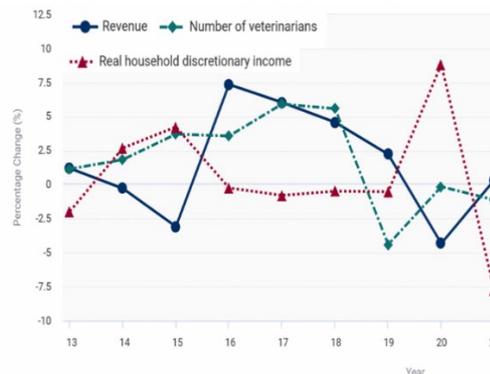
Data source: IBISWorld (2020); Developed by the authors

The Issue

Though the Australian pet food industry is well developed and continues to expand (Figure 2), the compound annual growth rate of this market has been declining since 2016 (Figure 3) (IBISWorld, 2020). This may indicate the decay of a volume-growth period. Since the Australian pet ownership rate is already very high, it could be very difficult for the industry to maintain a high growth rate if it is solely dependent on new pet owners. Furthermore, new trends are happening among the customers, influencing their preferences on pet food. Pet humanization, for example, has been the underlying factor leading the trends (Ferencz-Flatz, 2017). In Australia, over 60 per cent of dog and cat owners considered their beloved pets as part of their family (Animal Medicines Australia, 2019). Consequently, the well-being of their pets and the quality of pet food are increasingly valued. For instance, they start to focus on premium pet food, pet food safety and the source of the pet food.

However, these new demands are not fully satisfied. According to Meat and Livestock Australia (MLA) (2019), for example, a sizeable group of owners often make their pet food at home, due to a concern about the preservatives in dry food products. Given the recent stagnant growth of the market, therefore, it is worthwhile for stakeholders in this industry to take a fresh look at the pet food value chain, identifying current inefficiencies and exploring new opportunities to capture greater value.

This study is aimed to build insight and to evaluate value chain upgrade options for the Australian pet food industry. As such, it firstly develops a clear structure of the Australian pet food industry by value chain mapping. Then, it reviews the current trends of the Australian pet food industry and evaluates the potential opportunities in the context of the current domestic and global environment.

Figure 2. Australia pet food market revenue, 2010 to 2021**Figure 3. Rates of change in pet food variables, 2013 to 2021**

Source for both figures: Statista (2018)

After that, the value chain performance and constraints are evaluated according to available frameworks. Finally, some feasible solutions for upgrading the value chain and stimulating market growth are provided.

Value Chain Mapping

To illustrate all the activities and linkages between all the value chain operators within the chain, a value chain map is developed, based on information from IBISWorld and MLA (Figure 4). Value chain mapping illustrates all the activities and linkages between all the operators within the chain. It provides a visual picture of the value chain operators, value chain functions, and value chain promoters, helping establish a framework for further analysis (Chopra & Meindl, 2016). The value chain map indicates the various flows within the chain, including product flow, information flow, and value flow. Some practical value chain guidelines (or tool kits) have been developed, helping the mapping process. This study follows the guidelines for value chain analysis developed by Hellin & Meijer (2006).

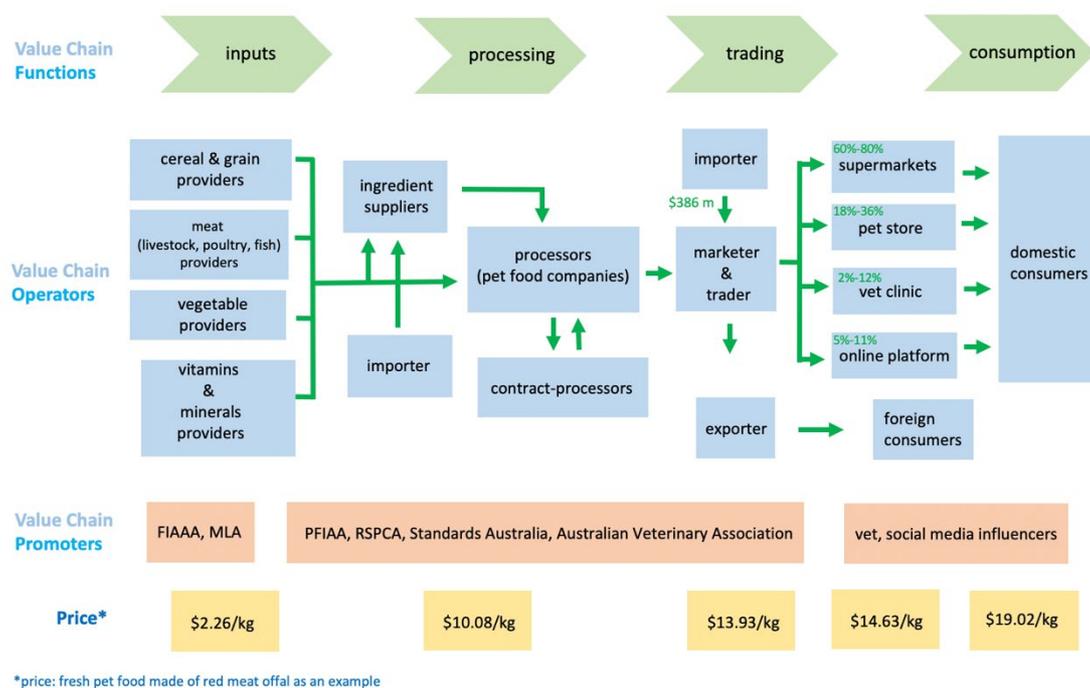
Chain functions

The functions performed in the Australian pet food value chain are similar to those in other agri-food value chains. They include inputs, processing, trading, and consumption. Inputs generally refer to the supply of raw materials that are used to make pet food, as well as other inputs. Processing is the manufacturing stage that produces the pet food products from the ingredients, notably by an extrusion process (in dry food pellets products), as well as other processes, including packaging. Trading includes the distribution of the products through different channels. Finally, consumption refers to the customer's purchase and the use of the products.

Chain actors and their linkages

The input actors in the pet food value chain usually are the grain providers, meat providers, vegetable providers, as well as vitamin & mineral providers. Furthermore, processors can source their ingredients from these raw material providers but in many cases, they source ingredients from specialty ingredient suppliers who pre-process the materials and offer the ingredients in a directly ready-to-process form. Pet food products are mainly produced by pet food companies themselves but sometimes they can also be produced by other contract processors. The products are then distributed

Figure 4. Value chain mapping of Australian pet food industry



Source: Developed by the authors

by traders and sold in various channels to customers, usually through supermarkets and pet shops (Animal Medicines Australia, 2019).

Chain promoters

The promoters of the pet food value chain are diverse. Upstream, the Feed Ingredients and Additives Association of Australia (FIAAA) and MLA are the two main promoters that represent suppliers of feed ingredients and additives in Australia, as well as providing services for the meat industry.

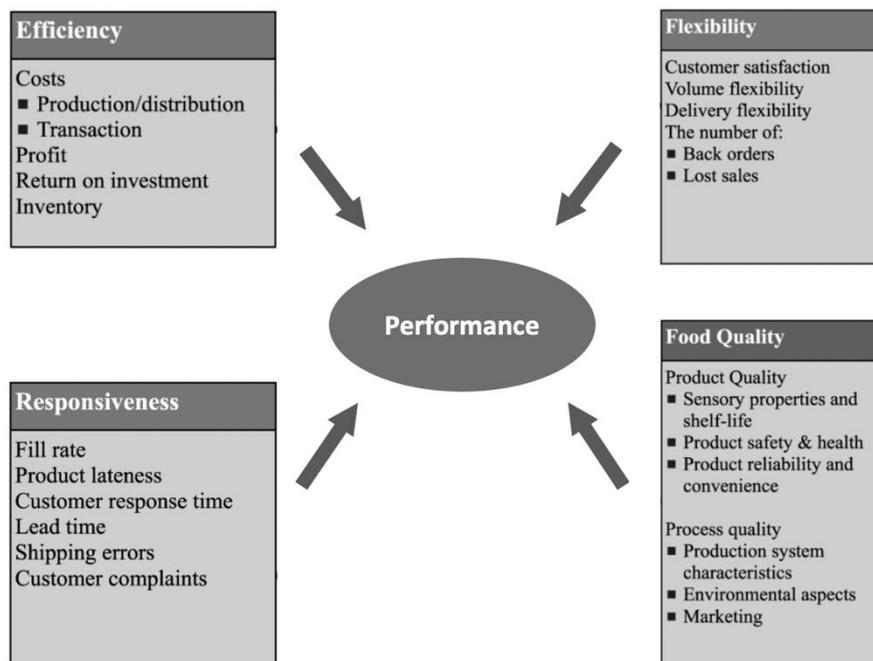
Further downstream, the Pet Food Industry Association of Australia (PFIAA) is the major promoter for the production of pet food, along with RSPCA, Standards Australia, and the Australian Veterinary Association, that provide different types of support for the chain actors. Other promoters are the key opinion leaders of the veterinary profession and social media influencers. They deliver information to pet owners, providing customer education and purchase guides.

Performance and Constraints

An essential part of value chain analysis is to evaluate its performance - to assess the success of the value chain. Many conceptual frameworks exist but they vary significantly in terms of providing accurate indicators of performance for comparison, benchmarking, and decision-making (Beamon, 1999; Lee & Billington, 1992; Lai et al., 2002). Furthermore, the criteria for value chain performance evaluation may differ greatly due to differences between industries. Thus, an industry-specific tool is required for value chain performance analysis. Aramyan et al. (2007) developed a conceptual framework that targets specifically the agri-food value chains. Therefore, it is appropriate for the current study to adopt this framework for the performance analysis.

In Aramyan's framework for value chain performance evaluation, four categories of indicators are involved. Firstly, *efficiency* measures the degree to which resources are utilized, and usually involves several measures including costs, profit, return on investment, and inventory (Lai et al., 2002). *Flexibility* relates to how the value chain can respond to a changing environment and/or high level of customer demands (Bowersox & Closs, 1996; Beamon, 1998). Additionally, *responsiveness* indicates the ability to provide the desired products with a short lead time (Persson & Olhager, 2002). Last, *food quality* is also a critical indicator of chain performance, which is a specific characteristic for the agri-food value chain (Luning et al., 2002). It includes product quality and process quality. The framework is illustrated in Figure 5.

Figure 5. Conceptual framework of agri-food value chain performance



Source: Adapted from Aramyan et al. (2007)

Efficiency

Given this supply chain is well-developed, it has good overall production efficiency. From the facilities/inventory point of view, the dry food factory plants of the major pet food companies are mostly located on transport routes to, or within, major markets. Mars Petcare Australia, for example, currently has three pet food factories (Mars Petcare, n.d.), namely at Wodonga (between Melbourne and Canberra), at Bathurst (two hours west of Sydney), and at Wacol (a suburb of Brisbane). Because most pet food products are consumed in the major cities, these locations reduce the cost of product transportation. From a distribution point of view, the value chain is also efficient. According to Animal Medicines Australia (2019), most of the pet owners (70-80 per cent) can easily purchase their pet food in supermarkets and pet shops.

Flexibility and responsiveness

Flexibility indicates how the supply chain responds to the changing environment. In this market, consumer's preferences are changing but the supply chain has failed to fully respond to these trends.

Several issues exist in this value chain, including unmet demand for premium pet food, limited raw meat pet food supply, and impeded information flow between producers and consumers.

The trend to pet humanization has resulted in a steady growth of the high-priced premium/gourmet pet food demand (Euromonitor International, 2020). Since pet owners tend to care more about the well-being of their pets, their willingness to pay for high-quality pet food will continue to increase in the future. However, the prominent producers only show a slow adaptation to this trend and still focus heavily on low-priced products, which contribute a large share of revenue (Mordor Intelligence, 2019). The premium pet food market is primarily driven by niche producers, but due to limited outlets, these products are hard to access by consumers and may not meet the increasing demand.

Additionally, pet food owners have started to show a passion for raw diets. However, this demand is also currently unmet. According to MLA (2019), consumer interviews and focus groups have identified a group of conscientious dog owners, who are passionate about raw diet and desire to make their dog food perfectly healthy. But few products in the market can meet their need. Therefore, they often make their pet food at home. This group of owners hold a critical view of dry food and other products because of the preservatives. Therefore, they believe a raw diet is naturally best for their dogs. However, this is a complex process for owners, and the dog food they make may have substandard nutritional value.

Also, as a fast-moving consumer good, pet food should deliver appropriate information to customers. However, there is a lack of information sharing and customer educating, which potentially impede the pet owner's willingness to pay. For example, most of the pet food products in this market use meat by-products as a primary source of animal protein, which raise pet owner's concern because they believe it is an inferior ingredient (Mordor Intelligence, 2019). Besides, some emerging sources of protein can be a good alternative and reduce the cost, but very few companies have adopted these alternatives because pet owners may hesitate about the novel ingredient.

Food quality

Food quality can be divided into product quality and process quality. Pet food safety is an essential part of product quality and is the ultimate constraint in the improvement of the pet food value chain. Because the Australian pet food industry is self-regulated, this adds to the uncertainty of food safety. There is no law to govern pet food production. Some food safety incidents have been reported recently. For instance, in 2019, the canned dog food product, My Dog Beef & Liver, produced by Mars Petcare Australia, was recalled due to potential plastic contamination (Seven News, 2019). The lack of a safety guarantee could become the main obstacle in the upgrading.

Furthermore, consumers are more aware of the importance of pet food nutritional value. Thus, they seek to explore pet food with optimum nutritional value. This is especially true in cat food since cats are obligate carnivores and they have limited bioavailability for carbohydrates (Case et al., 2011). So cat food should be ideally made of non-plant derived ingredients. However, most of the dry cat food products prevalent in this market have the first ingredient in their ingredient list to be grains or contain a relatively high level of grains. Therefore, pet owners who are conscious of their pets' health will not buy these products and they prefer grain-free cat food.

Trends and Opportunities

Pet humanization

From a consumer perspective, the fundamental trend recently in the Australian pet industry is “pet humanization” (Ferencz-Flatz, 2017), which could influence consumer's willingness to pay and provides opportunities for the sales of premium and gourmet pet food. As noted above, more than 60 per cent of owners in Australia considered their dogs and cats as part of their family. So there has been a steady growth of the high-priced premium pet food demand in Australia (Euromonitor International, 2020). However, the major players only show a slow adaptation to this trend and still focus heavily on low-priced products (Mordor Intelligence, 2019).

This trend of the strengthened bond between owners and pets will encourage the future growth of the premium/gourmet pet food sales, as well as the sales of other products, including functional diet and tailor-made products (such as breed-specific diet, life stage-specific diet).

Pet food safety concerns

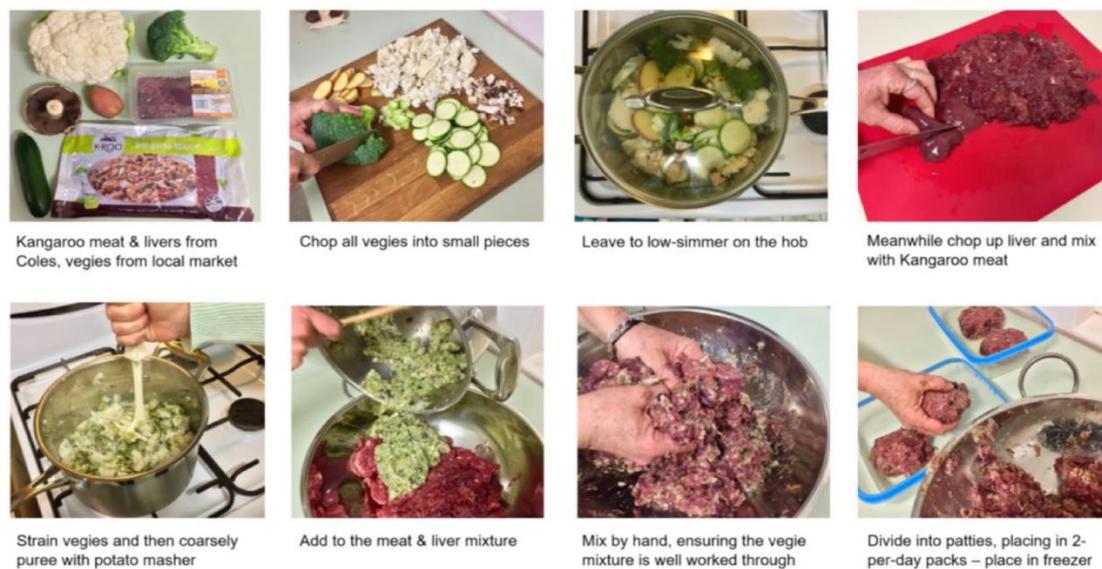
Additionally, there is a major concern over pet food safety in Australia. Unlike its counterpart in the United Kingdom, the Australian pet food industry is currently self-regulated (Radosevich et al., 2019). Only a voluntary standard for pet food has been filed in Australia (Standard AS5812). Therefore, there is no obligation for pet food manufacturers to recall products. This negatively influences consumers' confidence in Australian pet food products. Several recall cases have been reported recently in Australia, with most cases related to the inappropriate use of preservatives (Bischoff & Rumbeiha, 2018). For instance, there are cases of thiamine (Vitamin B1) deficiency, caused by sulphur dioxide in processed pet food and raw "pet meat" products. Other cases are related to foreign objects such as the plastic contamination case noted above (Seven News, 2019).

Misunderstanding of the ingredients

Also, some misunderstanding about the ingredients exists among many pet owners, indicating a need for appropriate information sharing and customer education. According to Animal Medicines Australia (2019), Australian pet owners source information on pet-related issues mainly from veterinarians (51 per cent), as well as internet search engines (45 per cent). Hence, the key opinion leaders in these two channels are critical in customer education, especially for solving pet food misunderstandings. For instance, meat by-products, including offal, are widely used as a primary source of animal protein, which raises the pet owner's concern (Mordor Intelligence, 2019). This emphasizes a focus on the collaboration between the pet food and pet health industries, helping pet owners to know the truth about nutrition and pet food products.

A preference for raw meat diets

Furthermore, pet owners have started to show a passion for raw diets. As noted above, MLA (2019) have identified a group of conscientious dog owners. Raw meat diet has become an obsession with them, in the hope of making their dog food perfectly healthy, but few products in the market can meet their need. They hold a critical view on the current available raw meat products in the market, including chilled dog rolls, because of the preservatives. Given the food safety and nutritional concerns, they often make their pet food at home by themselves (Figure 6). They believe a raw diet is naturally best for their dogs (MLA, 2019). However, this is a time-consuming process for them, and the food they made could be of substandard nutritional value.

Figure 6. Conscientious dog owners preparing their dog food

Source: adapted from (MLA, 2019)

Interventions and Chain Upgrading

Chain upgrading

Various understandings of the concepts of value chain upgrading exist. To start with, some traditional value chain toolkits define the value chain upgrading in a relatively narrow way. For instance, the *ValueLinks* manual (Springer-Heinze, 2007) refers to the upgrading as either improving chain revenue (value creation), or the income of chain operators (value capturing). This framework could be applicable and may be effective in some situations, especially in developing countries. However, it is limited in several perspectives, for example, it only involves chain operators. Therefore, the upgrading schemes of this framework may result in ineffective outcomes (Ewert & Hanf, 2015).

However, some newer value chain upgrading frameworks have been developed. Some of them call for a more systematic approach and a requirement of a value proposition (Baker et al., 2016; Bokelmann and Adamseged, 2015; Trienekens, 2011; Mitchell, 2011; Mitchell et al., 2009). For instance, Mitchell et al. (2009) argue that some key indicators need to be considered, including the rationale for the proposed intervention, and the rigour of the research methodology (more evidence-based research required). Other newer frameworks extend the scope of upgrading from vertical investments to horizontal investments, particularly focused on the coordination mechanisms and governance structures (Giuliani et al., 2005).

Additionally, others have developed chain upgrading frameworks based on a problem-driven perspective, for example, chain failure theory. The chain failure concept is similar to that of market failure which is widely used in the microeconomics literature (Mounter et al., 2016). Griffith et al. (2017) define chain failure as a condition where a value chain fails to maximise chain surplus due to the suboptimal supply of the throughput and value. Many factors may induce the chain failure, for example, chain externalities, and the upgrading interventions need to consider these accordingly.

In this current study, a comprehensive framework is adopted, which discusses all aspects mentioned above. On the one hand, it firstly discusses the chain upgrade interventions from the strategic fit point

of view. Then, some other detailed interventions are discussed, which is primarily adapted from the *M4P Toolbook* (DFID, 2008), such as process upgrading, product upgrading, and functional upgrading.

Strategic fit

Given the trends and the performance of the Australian pet food value chain noted above, the upgrading strategy should focus on responsiveness, instead of efficiency. In other words, the main focus of the strategic fit is on fulfilling the customer's demands, rather than cost minimisation.

This decision of the strategic fit is made based on the consideration of both customer and value chain uncertainty and value chain capabilities. From the customer and value chain uncertainty point of view, the consumer demand is certain. They have a demand for high-level services. However, the value chain is unable to effectively respond to this demand. Thus, all the interventions are based on the same goal. Several broad perspectives may be involved, for example, the improvement of the regulations of the pet food production to secure food safety, the coordination between the industry actors to accelerate the R&D and innovation, the positioning of the product values (for instance, high-end, natural, functional). These are elaborated below, in the three dimensions of product upgrade, process upgrade, and functional upgrade.

Product upgrade

Because of the increasing demand for premium pet food, effective action may be to further develop the premium range, which may effectively improve the current value chain performance. To achieve this goal, producers can provide products with better nutritional value. They can source better ingredients, for example, from Australian local regions, which have a pristine environment free from pollutants. Besides, the formula can be changed, using fresh meat instead of meat meal, using organic meat or even formulating with grain-free ingredients. Also, the inclusion of functional ingredients in the products can help the product upgrade, achieving therapeutic attributes by promoting health outcomes for pets. Focusing more on the growth prospects in the fast-growing premium segments can make the most of the opportunities and improve the value chain performance.

Furthermore, product packaging and processing need a further upgrade. For raw meat products, a better packaging method or a gentle sterilize process may enable a longer shelf-life and the possibility of preservative-free formula. The extended shelf life also promotes the stable supply of the raw meat diet. For some treats products, a package also increases customer experience and food safety.

Process upgrade

The process upgrade in this context will primarily focus on increasing pet food safety. Firstly, the improved regulatory environment could force the industry to strengthen its focus on food safety. Secondly, for pet food companies, special precautions and protocols may be adopted to minimise the probability of food contamination incidents. For instance, upgrading the manufacturing lines to achieve human-grade standards.

Functional upgrade

Regulation

The most urgent functional upgrade in the pet food value chain is the modification of the regulations. Although it may take a longer time to achieve, strict law enforcement could secure every pet food to be appropriate for pet consumption. The pet owners will become more confident on the pet food

products and may transfer from homemade pet food to commercial pet food products. It also enhances the international profile of Australia made pet food, stimulating export marketing.

Information and marketing system

It is necessary to convey the correct information to pet owners because the information is particularly important in determining customer's purchasing decisions. Information also provides chances to increase chain profitability by enabling a closer match of pet food products to the pet owner's preference.

For instance, pet food companies can work with professional pet health organizations to launch online platforms that support healthy pet diets. The platform can provide reliable information on feeding knowledge and educate pet owners on animal nutrition. Through the platform, owners can select the best pet food product that matches their pets. Also, it helps reduce customers' misunderstandings about related ingredients, for example, meat by-products. As such, the value chain performance could be improved through the establishment of the information system and improved responsiveness.

Development of new chain channels

Other functional upgrades may involve the development of new chain channels, such as a new route for raw and fresh pet food. To target pet owners who have a demand for raw and fresh pet food, red meat and poultry processors may have the ability to tweak their production system to produce in-house value-added raw pet food products using fresh offal. Then, they can sell the product either through retail channels or sell directly to consumers. Research undertaken by MLA (2029) has shown that meat processors investing in such products could potentially substantially increase their profit on these low value carcass components (Table 1).

Table 1. Processor margin when selling through retail channels (left) and when selling direct to consumer (right) (Using red meat as an example)

Processor- Retailer Sales Margin			Processor- Direct to Consumer Margin		
Raw Material Pricing (\$/kg)		\$ 2.26	Raw Material Pricing (\$/kg)		\$ 2.26
Normal Margin (\$/kg)	4%	\$ 0.09	Normal Margin (\$/kg)	4%	\$ 0.09
Additional Packing & Labour costs (\$/kg)		\$ 5.54	Additional Packing & Labour costs (\$/kg)		\$ 5.54
Additional Processing costs (\$/kg)		\$ 2.03	Additional Processing costs (\$/kg)		\$ 2.03
Transport Cost (\$/kg)		\$ 0.16	Transport Cost (\$/kg)		\$ 1.88
Transfer Price (\$/kg)		\$ 10.08	Cost before customer acquisition		\$ 11.70
Price to Distributor		\$ 13.93	Marketing costs (\$/kg)		\$ 0.22
Distributor Margin	5%	\$ 0.70	Total costs (\$/kg)		\$ 11.92
Distributor Sell Price (\$/kg)		\$ 14.63	Sell Price to Consumer (\$/kg)		\$ 19.02
Price to Retailer		\$ 14.63	Additional Margin	60%	\$ 7.11
Mark-up	30%	\$ 4.39	Total Margin (\$/kg)	60%	\$ 7.20
Retailer Sell Price (\$/kg)		\$ 19.02			
Additional Margin	38%	\$ 3.86			
Total Margin (\$/kg)	39%	\$ 3.95			

Source: adapted from (MLA, 2019)

Through this new value chain route, meat processors can provide fresh pet food for pet owners while significantly increasing the offal value.

Conclusion

The Australian pet food industry is in a transition period from volume growth to value growth. New trends are happening, including pet humanization, pet food safety concerns, ingredients misunderstanding, and raw meat preferences. These trends indicate some challenges and

opportunities within the industry. However, the industry bodies are under-performing in some of the areas and are unable to fully satisfy customer demands. Therefore, a paradigm shift for the industry is required to better meet these demands. Some possible interventions may include a more responsive strategic fit, product innovation, process upgrade, as well as functional upgrade.

This study however is very much an overview and has its limitations, so further detailed studies are required in these areas. First, more evidence-based research is required to enable more accurate and precise analysis. Also, more holistic, and pragmatic approaches in chain upgrades are required, identifying the interlinked root causes of some long-lasting problems.

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