

evaluationseries

2.3 Developing new markets and products



Developing new markets and products

The industry impact

PROMISE

In partnership with industry, develop prototype technologies to a 'market-ready' standard that may provide value-added consumer products that increase the value of the carcass.

PROGRESS

New market opportunities for value-added products have been identified, demand for low-value cuts has increased, and advanced technology platforms have been developed to add value to the carcass.

PERFORMANCE

The \$20.9 million invested by MLA and its partners between 1998 and 2008 has underpinned the development of new value-added products for launch before 2015, delivering benefits valued between \$94.4 million and \$206 million with a benefit-cost ratio of 4.5:1 up to 9.9:1.

SUSTAINABILITY THROUGH VALUE ADDING

Where we started

Three trends have impacted on the profitability and sustainability of the red meat industry from the early 1990s.

- 1** Changing domestic population demographics resulted in a higher proportion of time-poor working families, more Australians dining out and expanding menu choices. New value-added products released by competing protein sources (chicken, pork, seafood, plant-based) intensified market pressure on the red meat industry.
- 2** A growing price difference between choice primal cuts, secondary cuts and co-products emerged as the population lost the time and aptitude to properly cook secondary cuts.
- 3** There was a growing need to increase net revenue per carcass.

These trends presented opportunities and challenges. The red meat industry was compelled to adapt to changing market conditions, meet consumer demands for more convenient and exotic dishes, and increase profitability by adding value to otherwise low-price meat cuts.

A strategic response

From 1999–2000, the MLA domestic marketing program executed two broad strategies to address the ‘five pillars’ underpinning domestic demand:

- **Remove barriers to red meat consumption**
 1. Convenience – make red meat easy to buy and prepare
 2. Nutrition – promote red meat’s role in a healthy diet
 3. Integrity – build consumer trust and confidence
- **Promote meal enjoyment**
 4. Value – communicate red meat’s affordability
 5. Meal enjoyment – promote red meat quality and appeal

To meet consumer needs and find higher value markets for secondary cuts and co-products, a third strategy was designed to improve industry capability and increase profitability.

- **Develop new products**
 1. Develop new technology platforms for the red meat industry
 2. Build value-adding capability along the value chain
 3. Identify market opportunities for new products

In partnership with the Australian Meat Processors Corporation (AMPC) and peak industry councils, MLA generated collective industry investment in these strategies and the program positioned itself to focus on ‘pre-commercial development’ of new platform technologies.

Adding value to lower-priced secondary cuts that were previously seen as a liability was perceived as an opportunity to increase profitability while meeting “value for money” consumer demands. Program challenges were to identify and develop new technologies and to build value-chain capability that would see product development evolve from a commodity focus to a consumer focus. As value-added products have a finite lifespan, MLA recognised the importance of an enterprise level commitment to ongoing development of new products – until that time characteristic only of competing protein industries.

The program focused on early stage joint research investment consistent with the high risk associated with new products making the transition through the “product development funnel” (see diagram 2). This process was supported also by commercial partnerships managed through the MLA Donor Company (MDC)*.

The high failure rate of new food products and extra value-adding costs borne by processors and value-adders can be disincentives to enterprise investment. Industry funding such as that facilitated by the MDC’s Partners in innovation program (PIIP) was instrumental in sustaining the flow of raw ideas and concepts into the product development cycle (see diagram 2) including those for high-risk and novel platform technologies.

Addressing the challenges

The development of technologies able to add value to red meat has aimed to address significant industry challenges including:

The lack of a dominant value-adding culture – the processing sector has traditionally operated within a high-volume-low-cost paradigm where the aim has been to achieve the lowest-per-kilogram cost of production and shipping to the market of highest return rather than adding value to meet consumer needs.

A lack of awareness of emerging value-added product opportunities – new products have a finite and relatively short lifecycle and new value-added products must continually be developed in response to changing consumer wants.

The difficulty of transforming low-value red meat into attractive products – product innovation in retail has been limited to packaging, grinding, slicing or marinades while value-adding requires transformation, with costs and risks borne further down the supply chain.

Seeking value-added product opportunities in the fast-food service sector – processors and value-adders must build relationships with customers traditionally dominated by chicken meat processors.

Raising product merchandising standards at point-of-sale – busy working lifestyles have driven point-of-sale meal decision-making.

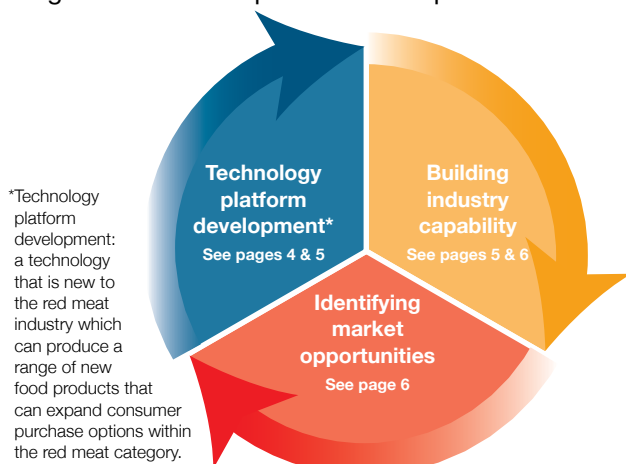
What we’ve achieved

The program has reported a mix of successful and unsuccessful innovation outcomes. In fact, unsuccessful projects are expected at this early stage of the innovation pipeline. Fear of failure has been sighted by the industry as a major impediment to value-added product development. Feedback from value-adders cites risk mitigation and MLA technical support as key contributors to their engagement with and adoption of novel technologies.

From pages 4 to 6, three successful projects and three unsuccessful projects will be described. Overall the return on industry funds invested was positive and was the result of the commercial impact of the few significant successes that outweigh the cost of the numerous project terminations.

* The MLA Donor Company (MDC) is a fully-owned subsidiary of MLA which provides a mechanism for attracting commercial and government investment in research and development.

Diagram 1: The new product development wheel



THE INDUSTRY IMPACT

What we've achieved

MLA has achieved each of the following performance measures set down at the "Developing new markets and products" program's inception:

- greater end-user adoption and market success driven by new value-added meat and ingredients
- increased profitability from value-added meat products developed as a result of improved industry capability

There have also been significant unanticipated spillover benefits to other industries from these outcomes which have not been quantified in this evaluation.¹

Fast financial facts[†]

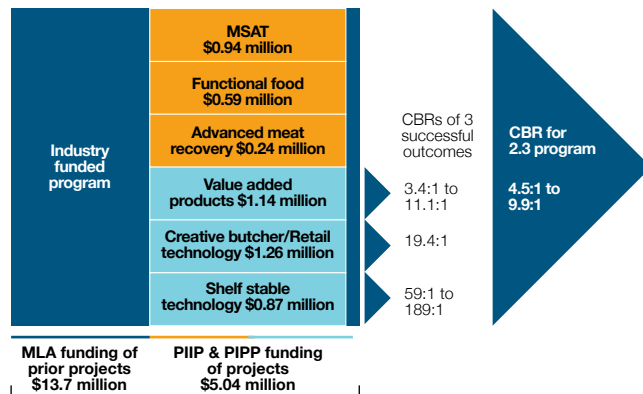
Australian red meat industry 10-year investment (1998-2008): \$20.9 million (including matching Australian Government contributions)

- Direct benefits to the red meat industry: \$94-206 million
- Benefit-cost ratio for the whole red meat innovation program (including failure costs): 4.5:1 to 9.9:1
- Internal rate-of-return at 7% discount rate = 42-54%

Program cost-benefit analysis

The benefit-cost ratio calculated by GHD² for the 2.3 Developing new markets and products program cluster (including the six project outcomes shown in diagram 3) incorporates all costs, regardless of the funding source.

Diagram 3: Total estimated funding allocation of program 2.3 'Developing new markets and products'



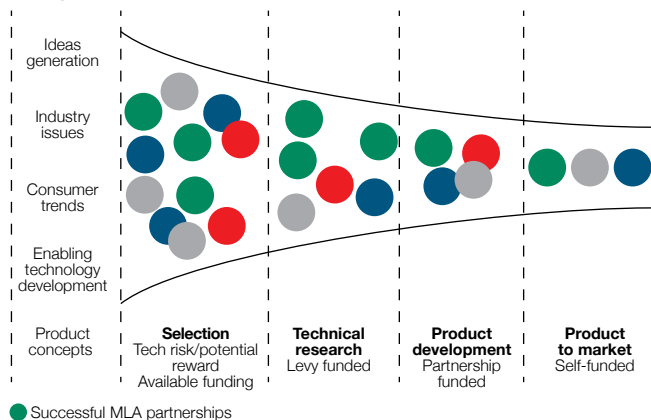
Total estimated funding allocation for program 2.3 \$18.74 million (1998-2008) equivalent to \$20.9 million in 2008 dollars.

■ Terminated projects ■ Successful projects

All amounts in nominal dollar values.

Diagram 3 shows how the benefits derived from the three successful outcomes described here (defined as those that have evidence of sales revenue return) are set against the total program costs to determine the cost-benefit ratio (CBR) for the whole red meat innovation program.

Diagram 2: The product development funnel



The product development funnel diagram above illustrates how various new product ideas compete to become consumer products. Each of the funding sources are represented as having an important part to play at different stages of the new product development lifecycle. A similar approach can be applied to the development of underlying technology platforms facilitated by MLA through the MDC.



"Product innovation is critical to our industry maintaining its share of purchase with key customers and any prospects for future growth."

Mr Tom Maguire,
General manager corporate affairs and innovation,
Tey Australia,
Director of Australian Meat Processor Corporation

Lessons learned

- 1 The positive benefit-cost ratio results for the program are due to the benefits from only a few highly successful projects that more than offset the entire cost of the program including the partnership funds invested in the three significant projects that were terminated.
- 2 Partnering with value adders to share the R&D risk is an important tactic for ensuring adoption and impact of new technologies by the meat processing and value-adding sector. This is likely to become a key component of future MLA investment through the Industry Collaborative Agreement (ICA) program.
- 3 Partnerships provide project structure and deliverables, technical support and market analysis which better equips partner companies with a framework for success and/or early termination.
- 4 The practical experience gained from this program shows that industry impact is maximized through the development of technology platforms that are capable of yielding multiple products rather than from the development of individual new products.
- 5 Industry program involvement in "pre-commercial development" of new value-adding platform technologies helps to build the confidence necessary for commercialisation partners (major retailers) to commit to the project. Their involvement in turn provides valuable input, support, advice and a national platform for product launch and promotion, which is likely to result in bringing products to market faster.
- 6 The PIIP and AMPC's Plant initiated project program (PIPP) are effective in facilitating adoption in the processing, value-adding, retail, food service and export sectors. These projects bring research prototypes and concepts through to 'market-ready' self-funded products (see diagram 2).

[†] All results in 2008 dollars

¹ GHD 2011, Ex-post evaluation of program 2.3 – Developing new markets and products cost-benefit analysis report, June 2011

² GHD, *Op. cit*

TECHNOLOGY PLATFORM DEVELOPMENT

Where we started

In the domestic market, the food service sector accounts for more than 30 per cent of demand for beef and more than 10 per cent of demand for sheepmeat. In the early 1990s, the growing fast-food chain and hotel market segments placed greater demands on red meat processors and value-adders to increase product innovation in an effort to help them meet changing consumer needs and improve margins on a per serve basis. To meet this challenge, processors and value-adders had to build supply-chain relationships with customers traditionally dominated by chicken meat processors and to overcome resistance to the use of undervalued secondary cuts.

A strategic response

As a consequence of market research and product scanning conducted by MLA, four new technology platforms were identified. The PPIP-facilitated co-investment to further develop and commercialise these platforms, which were selected based on evidence of their capacity to:

- provide processors with a net increase in carcase value (particularly from secondary cuts)
- maximise the net value added along the value chain
- provide competitive industry advantage over competing protein industries

What we did

Shelf stable technology **SUCCESS**

INVESTMENT: \$1 MILLION[†] FROM 2001–2004

Shelf stable technology is a high pressure retorting process which increases the convenience, palatability and value for money of secondary cuts of high connective tissue content. It provides both a shelf stable and tenderised product which requires no refrigeration by the consumer and can be reheated in its packaging in the microwave. The technology was initially developed to add value to lamb shanks sold in the export food service sector. The technology platform was subsequently used to manufacture a range of beef and lamb products for domestic food service and supermarket retailers. This stream of products from a single technology exemplifies the value of technology platforms over individual products.

The new shelf stable technology platform triggered substantial gains:

- a significant price increase for the raw product above its baseline value¹ because the additional volume attributed to product sales meant demand exceeded supply
- spill-over benefits to other industries, predominantly from shelf stable cooked rice products and pasta meal solutions

In 2002, the innovative technology platform, then still in its early single product phase, was recognised with the prestigious Rabobank Monash University Innovation Award and the Australian Institute of Food Science and Technology Innovation Award.

Meat Strip Alignment Technology (MSAT) **TERMINATED**

INVESTMENT: \$3.4 MILLION[†] FROM 1999–2008

The Australian red meat industry often uses non-steak cuts and trim to produce low-value restructured products because these pieces are either too tough, or the wrong shape or size, to be sold as premium cuts. The eating quality of restructured steaks, roasts and strips produced in this way is highly variable.

Based on the premise that consumers want cheaper, higher quality, tender and juicy cuts, the MSAT project developed with CSIRO used a new technology-driven approach to improve the texture of meat reformed into steaks from smaller strips. The MSAT technology aligned lower-cost meat strips within a pressure-moulded chub that could be frozen, sliced into steak-like pieces and then either grilled as

a steak or diced for casserole. The institutional segment of the food service sector was regarded as the greatest potential outlet for MSAT products. Many catering customers were looking for a product that was fully cooked, portioned or sliced, met hazard analysis and critical control points (HACCP) criteria and had a low plate cost (about \$1.50 per 150-gram portion).

The texture of lamb products produced with MSAT technology was quite satisfactory and addressed the need for a use for lamb trim. For beef, however, the technology was not as successful as the texture of the final product sat somewhere between mince and whole muscle meat. As beef provided the most viable opportunity in the market at the time from a price point perspective, trials were pursued to overcome this issue. The failure of these efforts to overcome textural issues led to the project's termination.



Shelf stable lamb shanks

Advanced Meat Recovery (AMR) **TERMINATED**

INVESTMENT: \$0.24 MILLION[†] FROM 2002–2006

Recovery of muscle tissue from bones can represent a significant yield improvement for processors. The conventional mechanically separated meat (MSM) recovery system produced a product which failed to sell at an acceptable market price due to recovery process side-effects: high calcium levels, high microorganism count, poor protein functionality and incorporation of bone marrow. Cargill Beef engaged MLA and AMPC to support a PIPP designed to demonstrate the advantages of the alternative advanced meat recovery (AMR) over MSM technology. The AMR system salvages the remaining muscle tissue from boning room waste to create a 'meat' product that does not display any of the inherent side-effects and sells at a premium in the US.

The Australian Quarantine and Inspection Service (AQIS) did not appreciate the superior value-adding attributes of the AMR product relative to traditional MSM. As the AMR product cannot be sold without AQIS approval, the expected financial benefits will not be realised until there is a regulatory review.

Value-added red meat product range **SUCCESS**

INVESTMENT: \$3.6 MILLION[†] FROM 1998–2008

Collaboration within the MDC led to the development and successful launch of two product ranges in partnership with food processor Beak & Johnston and a major supermarket retailer – the value-added BBQ range and the Sizzle Steak product.

Sizzle Steak is a thinly sliced steak product derived from a secondary cut produced at speed and in volume. Such products have been available at store level in the specialty retail sector for many years, but there was no large scale automated process suitable for tonnages required to service the supermarket sector. The absence of such a technology meant that the secondary cut was destined for a low-value commodity role.

Sizzle Steak generates a \$2.50-to-\$3.50 per kg² gross margin advantage over alternative uses for same source primal cuts.

[†] Nominal dollar value

¹ RMICS 001, *Measuring and communicating the industry impact of shelf stable technology*, Pro and Associates Australia Pty Ltd, 2006

² PPSH 0338, MLA 2009, Sizzle Steak – Final Report

The resulting increased demand for the secondary cuts delivers broader industry benefits including:

- price increases in outside flats and other lower-value cuts fuelled by higher demand and sales growth in Sizzle Steak sold through supermarket retailers
- spillover benefits to the Australian pork and chicken industries, partly attributable to the influence of MLA product development on a new range of similar products released by them in 2010 and 2011 respectively

The benefits that accrued to the value-adder in the Sizzle Steak example can in future accrue to processors as they adopt technology for other primals and customers.



Specialty retailers recognise business success is dependent on individual product margins and value-adding.



Collaboration within the MDC PIIP led to the development of the successful Sizzle Steak product in partnership with food processor Beak & Johnston.



“The support and involvement of MLA in the [product development] project reinforced the necessary confidence of Woolworths to commit to supporting the product. Access to this retail channel greatly increased the likelihood of successful sales outcomes.”

Mr David Beak, Proprietor Beak and Johnston Pty Ltd

Where we started

Specialty red meat retailers, otherwise known as independent butchers, represent about one third of domestic retail demand for red meat, while full service supermarket retailers account for the balance (see diagram 4 below). Despite daily interaction with consumers, there was little product innovation or focus on value adding at the butcher level. Focused on shelf space utilisation and red meat, the supermarket sector was treated as a commodity product with little, if any, value adding. The early 1990s saw increasing vertical integration between processors, wholesalers and independent butchers as individual companies took control over red meat production, processing and retailing to increase marketplace power. This was an early demonstration of the potential for boosting profitability by moving downstream along the value chain.

A strategic response

While independent butchers regarded higher customer volume as important, they recognised business success increasingly depended on individual product margins and value-adding.

In contrast, full service supermarket retailers adopted a commodity to all meat products. Their focus was not on maximising the value of red meat sales, but on selling a variety of supermarket products which may include red meat. They marketed a whole-of-store shopping experience to attract large customer numbers.

Carcase utilisation was considered a priority by both independent butchers and full service supermarkets as both have their own boning rooms and aspire to meet consistent demand for the same cuts throughout the year.

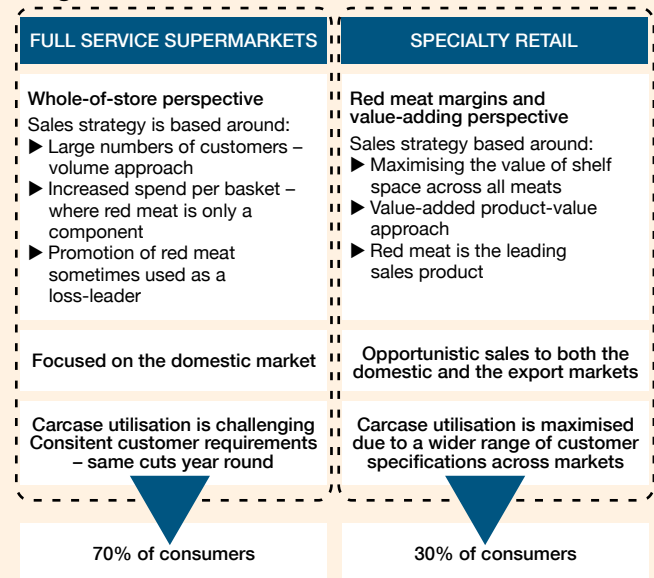
The Australian Meat Industry Council (AMIC), with the support of MLA and AMPC, worked with independent butchers to implement a strategy to maximise red meat margins by building capability to manage allocated shelf space, embrace value-adding and exploit branding.

What we did

Creative Butcher Network SUCCESS
 INVESTMENT: \$0.6 MILLION¹ FROM 2001–2004

In 2000, independent retail butcher outlets were responsible for 30 per cent of domestic red meat retail sales and a crucial channel for point-of-sale promotion of innovative red meat menu options. The AMIC worked with MLA to launch the Creative Butchers initiative with their members.

Diagram 4: Domestic retail channels



IDENTIFYING MARKET OPPORTUNITIES

The complementary development of new dynamic in-store displays of menu concepts using point-of-sale technology supported consumer meal decision-making and encouraged consumption of value-added red meat products.

Between 2000 and 2003, Creative Butcher workshops increased value-adding and new product development at the retail level. Red meat innovation kits using more than 100 new value-added product recipes and preparation methods stimulated this growth. The kits were distributed to an initial network of 500-plus butchers.

As a result of the workshops and distribution of kits³:

- profitability reportedly increased for 82 per cent of the participating Creative Butchers
- the proportion of value-added red meat sales to total store sales increased 12 per cent to 32 per cent
- up to 94 per cent of the Creative Butchers agreed that consumer satisfaction had improved as a result of meeting needs for convenience, variety and enhanced product appeal

By developing value-adding capability and value management skills, this initiative increased value chain profitability using existing technology.

In-store retail technology development

INVESTMENT: \$1.2 MILLION[†] FROM 2001–2004

Retail technology developments increased specialty red meat retailers' capability to analyse consumer buying behaviour and improved in-store management, point-of-sale product display and marketing.

Butchers cited efficiency and productivity benefits including⁴:

- faster and easier customer service
- time savings in administration and ordering
- more effective management of stock levels, reducing waste and the need to discount slow moving product

The retail technology system developed in the course of this project has been commercially available since 2004. It captures real-time processing and reporting information including revenue, volumes, species and cuts sold at point-of-sale.

MLA and retail butchers can access point-of-sale information stored on the database via reports generated from the portal which provide a consolidated view of sales transactions across all participating sites.

Where we started

The higher proportion of time-poor working families, a growing trend towards dining out and greater menu options evident in the early 1990s meant that red meat processors and value-adders had to adapt to changing market conditions to remain competitive.

A strategic response

Strategic research initiatives developed using collective industry levy funding were leveraged to create innovative technologies tailored to the red meat industry that could be used to develop more value-added products. MLA recognised the need to provide integrated information and technical support services including market research to improve the industry's capability and increase product value.

The program strategy reasoned that these objectives could be achieved by:

- meeting high levels of end-user and consumer satisfaction and confidence
- supporting business growth in new markets and alternative outlets
- promoting the use of lower-value meat cuts to realise improved whole carcass value

What we did

Functional foods

TERMINATED

INVESTMENT \$0.8 MILLION[†] FROM 2002–2004

During the early 2000s, market scanning revealed developments in overseas markets and other product categories (notably dairy) which suggested a growing consumer interest in functional foods.

MLA collaborated with value-adder Hans Smallgoods to pilot the development and launch of an Omega-3 enriched Strassburg smallgoods product through major supermarket retailers.

Nutritional claims were verified through clinical trials that confirmed the product's Omega-3 bypassed the stomach and was absorbed into the body to contribute to the total intake of long-chain polyunsaturated fatty acids. However, the product was not successful in the marketplace because it was unable to command a price premium for its functionality sufficient to justify the increased cost of manufacture.

The enduring value of this project was the demonstration of the potential for incorporation of biologically effective Omega-3 fatty acids into a compound meat product without adverse flavour impacts. The regulatory framework for nutritional claims at the time was cumbersome and conservative. Although it appears to be improving in the 2011 review, it will always represent a hurdle to be negotiated by the value-adder.

Published by Meat & Livestock Australia Limited
ABN 39 081 678 364
April 2012

© Meat & Livestock Australia (2012)
ISBN 9781741919073

Disclaimer: Where possible care is taken to ensure the accuracy of the information contained in this publication. However, MLA cannot accept responsibility for the accuracy or completeness of the information or opinions contained in the publication. You should make your own enquiries before making decisions concerning your interests.

Reproduction in whole or part of this publication is prohibited without prior consent and acknowledgment of Meat & Livestock Australia.

Suite 205, Level 2, 406 Pacific HWY
St Leonards NSW 2064
AUSTRALIA
Tel +61 2 9439 6866
Fax +61 2 9436 0343
www.ampc.com.au



Level 1, 165 Walker St,
North Sydney NSW 2060
AUSTRALIA
Tel +61 2 9463 9333
Fax +61 2 9463 9393
www.mla.com.au



Hans Omega 3 product

[†] Nominal dollar value

³ RMICS 002, *Measuring and communicating the value of the Creative Butcher workshops*, Symbio-Alliance, 2006

⁴ Retailer technology solution report case study prepared for MLA, Monash University Business & Economics, 2005