

final report

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Co-Innovation Program Evaluation: Final report

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Abstract

Meat and Livestock Australia (MLA) launched the Collaborative Innovation Strategies Partnership Program (now called the Co-Innovation Program) in 2007 to support companies develop comprehensive innovation strategies and capability. It is now timely to review the model and recommend its evolution to meet future challenges.

Eighteen current or recent partners were invited to explore the impact and nature of their engagement with the program from 2015-2020. At the time of writing, sixteen have been interviewed. Because of the disruption caused by the coronavirus pandemic, two others have postponed.

The study reveals that partners value the Co-Innovation Program as an enabler of change. They describe an agile program which can respond quickly to industry needs. It encompasses the practical concerns of partner companies as well as the strategic concerns of the industry and facilitates solutions which can benefit not only the partner company but also the whole industry. The Co-Innovation program brings the sector together and accelerates the adoption of research and innovation.

Its focus on significant challenges which requires cross-portfolio solutions through new practices, research, technologies and digitisation, makes the specific value hard to isolate and quantify. However, through personal interviews, financial data and online surveys this study has captured both tangible and intangible benefits. It demonstrates that the MLA Co-Innovation Program is a proven and valued model for enabling transformative change by building capacity for innovation, collaboration and adoption.

Executive summary

MLA established the Co-Innovation Program to help red meat companies build innovation capability and culture to address strategic challenges in the face of unprecedented change. Now in its thirteenth year, it is time to review the model to assess its effectiveness to date and options for addressing the escalating challenges of our times.

The Co-Innovation Program has distinctive features compared to other research adoption programs.

- The approach focusses on strategic rather than operational challenges, complex rather than discrete problems, and works towards whole of business outcomes for the future. It delivers innovation outcomes in digitisation, technology adoption, culture transformation and sustainability, primarily through a cross-portfolio suite of projects. This breadth of activities increases impact and encourages experimentation while minimising risk. The outcomes of successful sub-projects are sufficient to make up for projects which don't succeed. They provide a safety net.
- The Co-Innovation Program is demand-based; it identifies the specific gap in the company strategy, defines the problem comprehensively, and through the extensive MLA network, finds the capability to address the underlying issue. It aligns initiatives with the organisation's vision and results in an end-to-end, integrated outcome to achieve strategic objectives for the future.
- It is a personalised support model customised to the company need through:
 - a co-funded Innovation Manager in the partner organisation,
 - a dedicated MLA Relationship Manager,
 - facilitated networks of co-funded positions to encourage collaboration and knowledge sharing,
 - a triaged process for accessing research and capability,
 - a Strategy-on-a-Page with a 3-5-year innovation road map to align with organisational objectives,
 - access to funds for initiatives and projects. The project funds may come from the MDC (MLA Donor Company), levies, internal or other external sources.

Partnering with the Co-Innovation Program means that results are shared in a meaningful way through reports, personalised contact, collaboration and workshops, which increases the rate of adoption across multiple companies.

MLA gets continuous feedback on the Co-Innovation Program through ongoing interactions with partners, as well as formal, annual performance reviews. This built-in, self-managed feedback process measures the achievement of targets for each organisation and informs their ongoing strategy.

However, measuring the overall value of innovation capability programs within a business is challenging. The benefits of innovation strategies are often difficult to quantify; the results are long-term and are hard to extricate from Business-as-Usual and concurrent project work. The exclusive

contribution of the Co-Innovation Program is obscured because it is an enabler of better outcomes across a portfolio of projects.

This evaluation was set up to gather in-depth data from the past five years across multiple partner companies with a focus on the specific value of the components of the Co-Innovation Program. In consultation with MLA, the project team identified both tangible and intangible indicators of value which were interrogated through partner interviews, case studies, online surveys, literature research and financial data.

This study can report substantial value for the individual companies and the industry attributable to the Co-Innovation Program, including:

- Reaching the majority of the red meat industry (over 70% of producers and processors).
- Increased innovation maturity and R&D within partner organisations through long-term program engagement.
- Increased performance, culture, innovation and collaboration within organisations due to capability development.
- Elevated practices across the industry through accelerated adoption of technologies which has led to growth and productivity improvement.
- The alignment to the United Nations Sustainability goals contributing to a better, fairer world.

Significantly all respondents confirmed that participation in the Co-Innovation Program was critical to achieving innovation outcomes. Five partners said that without the program they wouldn't have addressed innovation at all. Eleven partners said that they would have addressed some of the challenges, but with fewer resources, not as quickly and with less impact.

The report concludes that the Co-Innovation Program provides an effective model for promoting research and technology adoption in red meat companies through the development of capacity, capability and confidence.

Recommendations for strengthening the ongoing implementation of the model are:

- **Strengthening and expanding the Co-Innovation Program**
 - o Training and development for Relationship Managers
 - o Streamline reporting and contract processes
 - o Streamline access to research
- **Expanding reach and impact of the Co-Innovation Program across the industry**
 - o Develop a collaboration and engagement strategy for small to medium companies
 - o Develop a metrics toolbox for capturing value
- **Strengthening partner company internal buy-in and capability**
 - o Develop a strategy for program engagement of senior leadership in partner companies
 - o Training and development for co-funded positions

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1 Background

Meat & Livestock Australia (MLA) launched the Collaborative Innovation Strategies Partnership Program (now called the Co-Innovation Program) in 2007. It aims to co-develop innovation strategies with individual companies to meet commercial imperatives while focusing on the implementation of industry and government innovation priorities.

The program is now in its thirteenth year and there is a requirement to review the model to assess its effectiveness and recommend future enhancements.

The last evaluation of the program in 2009-10 showed positive outcomes in terms of professional development, collaboration, processes for improvement, value chain innovation, customer alignment, networking and employee capability.

This evaluation reviews the impact of the Co-Innovation Program based on both qualitative and quantitative evidence collected from sixteen partner companies. The evidence has been assessed against agreed criteria to capture the tangible and intangible benefits to individual companies and for the industry.

2 Project Aims

Specifically, the Co-Innovation Program evaluation aims to:

- Collect and analyse existing information to capture both the quantitative and qualitative benefits that they describe, as well as other insights into the program.
- Collect and analyse up-to-date feedback on current and past programs by interviewing participating enterprise representatives.
- Audit innovation effectiveness in individual enterprises and recommend strategies for growing innovation capability and outcomes.
- Survey selected employees to capture the broader impact on culture and mindset within the companies and the industry,
- Collect the stories of innovation from different enterprises to illustrate the impact and value of the program.
- Recognise the innovators, those people who have contributed to an innovative outcome, through the [Hargraves Innovator Awards](#).
- Provide feedback to companies about enhancing their innovation strategies, using insights from member companies of the Hargraves Institute.
- Provide recommendations to MLA about future interventions to support innovation and growth across the industry.

3 Project Objectives

The primary objective is to review and evaluate the outcomes of the investment made by MLA in co-innovation activities with enterprises within the industry.

The specific objectives are:

1. To capture the impact and outcomes of the Co-Innovation Program in participating enterprises based on both quantitative and qualitative data.
2. To report on the intangible benefits of the program investment in terms of organisational culture, leadership, employee experience, customer experience and collaboration.
3. To recommend enhancements to grow the value of the program for both the whole industry and individual enterprises.
4. To provide insights from other enterprises and industry from Hargraves member companies coupled with local and international research.

4 Methodology

1.1 Desk study of the model and how partners engage with it

A substantial amount of background materials has been reviewed to inform this evaluation. Each company provides quarterly milestone reports and final reports which have been accessed in preparation for site visits, as well as to review outcomes and impact.

1.2 Interviews with Co-Innovation partner companies

In consultation with Relationship Managers, the project team organised and conducted interviews with relevant people in organisations currently or recently engaged in the program. The interviewees were innovation managers, operations managers, CEOs and mostly included the MLA Relationship Manager. The interview template was emailed in advance to prepare interviewees. A timeslot of one and a half hour was allocated for the interview.

The interviews explored:

- The nature and duration of the engagement between MLA and the company
- The investment (when the figures were available)
- The quantitative outcomes (when available)
- The qualitative outcomes
- The impact of MLA engagement
- Recommendations for the future

Eighteen companies, nominated by MLA, were invited to participate in the interviews and at the time of writing sixteen had completed the process. The two remaining companies have postponed due to the Coronavirus pandemic.

1.3 Online surveys to understand future needs

Companies were invited to complete online surveys to gather insights into:

- Innovation Maturity
- Innovation Priorities
- Innovation Mindset

Between nine and twelve people completed the surveys which represents between 60 and 75% of participating companies.

1.4 Case studies to demonstrate innovation impact

As part of the interview process, case studies which address industry-wide challenges were identified and written up.

1.5 Hargraves Innovator Awards to recognise outstanding individual contributions

Those who drove innovation in different companies were nominated to receive a Hargraves Innovator Award. These awards are externally assessed through an interview with the individual and aligned to Deakin University credentials.

Hargraves Innovator Awards focus on the people and how they contributed. It is not so much about the outcome, although that provides essential context.

Innovators tell their story and reflect on how they contributed through their mindset, that is, the beliefs, perspective, behaviour and actions that they brought to the innovation. They are encouraged to examine their unique strengths. Making strengths explicit builds confidence, engagement and pride in individuals and their work.

The interviewer writes the story and assesses it against Deakin.Co credentials for Professional Practice from Certificate 3 to master's level.

Award winners receive a certificate with their story on the back, a digital badge and a step-up to a credential if they choose to progress.

1.6 Sustainability framework

*Australia is committed to the Sustainable Development Goals (SDGs) as a universal, global approach to reduce poverty, promote sustainable development and ensure the peace and prosperity of people across the world. **The SDGs reflect things that Australians value highly and seek to protect**, like a clean and safe environment, access to opportunity and services, human rights, strong and accessible institutions, inclusive economies, diverse and supportive communities and our Aboriginal and Torres Strait Islander cultures and heritage. Our support for political, economic, social and religious freedoms is underpinned by our commitment to promote liberal democracy, the rule of law and the rules-based international order.*¹

¹ <https://dfat.gov.au/aid/topics/development-issues/2030-agenda/pages/sustainable-development-goals.aspx>



Fig 1. UN Sustainability Goals

Following the advice of MLA, co-innovation initiatives have been mapped against the goals which are relevant to the agricultural sector.²

- SDG2. Zero Hunger- End hunger, achieve food security and improved nutrition and promote sustainable agriculture
- SDG6. Clean water and sanitation – Ensure availability and sustainable management of water and sanitation for all
- SDG7. Affordable and clean energy – Ensure access to affordable reliable sustainable and modern energy for all
- SDG8. Decent work and economic growth – Promote sustained, inclusive and sustainable economic growth, full and productive employment
- SDG12. Responsible consumption and production – Ensure sustainable consumption and production patterns
- SDG13. Climate action – Take urgent action to combat climate change and its impacts
- SDG14. Life below water – Conserve and sustainably use the oceans, seas and marine resources for sustainable development
- SDG15. Life on land - Protect, restore and promote sustainable use of terrestrial ecosystems
- SDG17. Partnerships for the goals – Strengthen the means of implementation and revitalize the global partnership for sustainable development

² Enhancing MLA Program Evaluation, Ian Jenson Power Point.

2 Results

The following section presents the results from partner feedback, the online surveys, the case studies, the innovator awards, the MLA data and the alignment to the UN Sustainability Goals.

2.1 Partner interview feedback about the impact of the program

The consultant asked participants to describe how the Co-Innovation Program engagement had impacted their organisation, with specific examples.

The chart below represents the responses

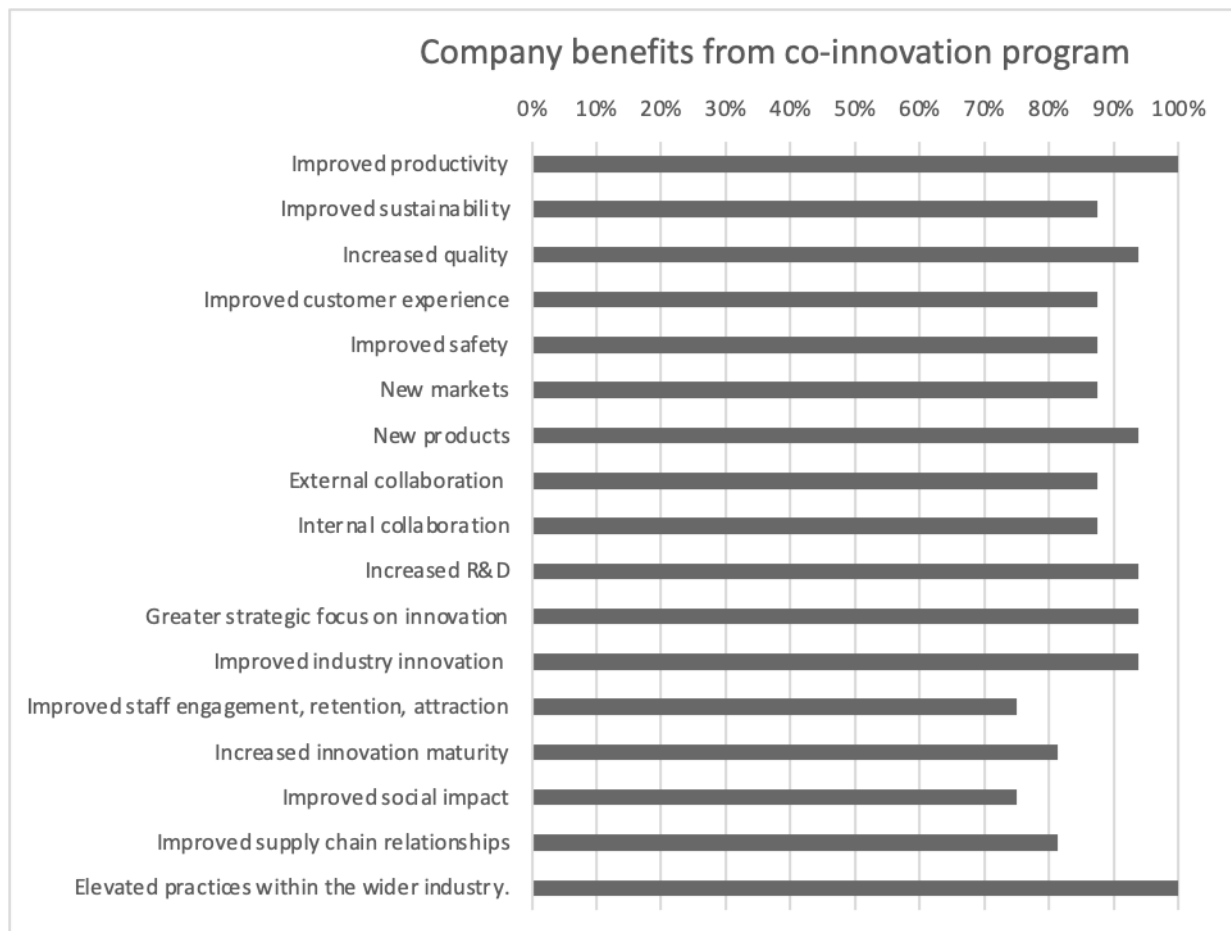


Fig. 2. Company benefits from Co-Innovation Program

The discussion explains how the companies described each benefit.

2.1.1 Improved productivity

Partners reported benefits from saving time, money and resources and the ability to do more with less resulting from the suite of projects undertaken. Partners highlighted specific examples, such as:

- Significant labour savings through the use of digital and data, for example, the use of sensors which enable remote monitoring of water and pastures has halved the labour time.

- Significant benefits from the use of new technologies trialled within the project, for example, thermoforming machines, linerless cartons, bandsaw operations, automated storage and retrieval systems, cold carcass grading cameras, hook cleaning and immobilisation.
- One company reported a 40% reduction in labour costs over two years after the commencement of the program.

Partners who instigated projects to improve internal systems and processes to increase capacity for innovation reported that it had resulted in better management, processes, operations, and as a result, better project and product development outcomes.

Others identified that staff and customer training, which resulted from projects had increased productivity because of an increase in skill levels among staff. External workshops resulting from the program increased skills not only for internal staff, but also for supply chain partners.

Most importantly, all of the companies reported that co-funded positions in innovation, supply chain, digital had raised skill level and performance across the company.

2.1.2 Improved sustainability and environmental impacts

Water, energy and waste management strategies have had a positive impact on companies and for many are the highest priority. Partners recognise the need to reduce the carbon footprint not only to save money and the environment but also to increase brand reputation and provenance. Many acknowledged the value customers attach to action on climate and sustainability. Other companies noted that environmental action, for example, increasing the use of renewables, bolstered staff engagement and pride in the company.

There is an increasing desire to transition to renewable energies and water preservation strategies, and companies are engaging in a range of strategies:

- Several companies are exploring biogas options through partnerships with local municipalities or by investing in their own biogas plant.
- Others have introduced systems for water recycling such as reverse osmosis, and a partnership of companies is collaborating with the Murray Darling Basis Authority to implement a water recycling system to reduce water usage.
- Some companies have introduced solar energy, and for one company, solar currently provides 60% of energy needs and has significantly reduced costs. Coupled with biogas, this could meet 100% of their needs within the next five years.
- Another company aims not only to get off the electricity grid, but also to become an energy producer, and add to the revenue stream.
- One company had implemented a solar system for three months and saw a reduction in the electricity bill of 10% with a projected saving of 25% over the full year. They also saw a \$500.00 per month saving using recycled water for motor chilling.
- A partnership of companies is exploring ways to improve effluent management in the transportation of cattle.

There are also some smaller initiatives with environmental aims which have resulted either directly or indirectly from co-innovation projects. For example, companies are reviewing the consumables and packaging they use, such as the use of black film versus transparent film in packaging, the transition to LED lighting, the use of the more energy-efficient nitrogen for cooling. Others are looking to use all parts of the carcass to reduce waste.

2.1.3 Increased quality

Every company identified increased product quality as a benefit of the Co-Innovation Program. Whether through new technology, better data use, new processes and systems or the introduction of MSA, all of the companies agreed that it had resulted in an uplift in the quality of their product.

Many of the companies report the positive impact of digitisation on product quality. For example, the use of animal data has improved the quality of livestock and therefore, the red meat product. Giving feedback based on data to individual suppliers has helped to address problems in their livestock; data to the supply chain has lifted the quality of transportation; and the ability to get real-time data has led to more informed business decisions.

"With measurement comes comparison and targeted improvements."

- One company pointed to a reduction of 75% in customer complaints since joining the Co-Innovation Program in 2017.
- MSA grading has contributed to better quality and variety in red meat products including grain-fed, grass-fed, antibiotic-free options. Companies feel more confident in the product, which has generated more successful marketing.
- New technologies introduced through the program have enhanced quality, for example, Modified Atmospheric Packaging extends shelf-life; water trimming for better hygiene and consistency; linerless packaging has reduced plastics in meat.
- One company has introduced a steak school to provide a live demo of cooking techniques to international chefs. The demonstrations are accessed through a QR code on the packaging.

2.1.4 Improved customer experience

The focus of red meat is now on the experience of eating rather than the raw product. Enhancing customer experience has become a reality for red meat producers and processors. There is a recognition that customer tastes are diversifying, which presents great opportunities both here and internationally.

The industry is looking to satisfy the diverse needs of the global marketplace through:

- new products (antibiotic-free, organic, grass-fed and so on)
- new cuts (using different parts of the animal, new shapes)
- new processes (dry ageing, ready meals, value-adding)
- new customer engagement strategies (cooking demonstrations, competitions, and promoting provenance and sustainability through digital traceability, training workshops to explore customer concerns)
- new packaging (portion sizes, shapes and sustainable materials),

- new transportation methods (to prolong freshness and reach more remote customers),
- new media (social media and digital marketing and communication strategies to reach the consumer directly.)

The companies identified improved customer feedback loops through better systems for traceability, recyclable packaging, new services for educating customers in cooking techniques and better use of data.

“Overall the introduction of business improvement processes through the Co-Innovation Program resulted in higher quality evidenced by a reduction in customer complaints by 75% over two years in one of the companies and in another, complaints per million units sold have decreased from 4.2 to 2.2.”

2.1.5 Improved safety

Much of the technology introduced through co-innovation projects has resulted in improvements in safety for workers, animals and consumers. Examples provided by partners include:

- The introduction of the Bandsaw, Bladestop and spray trimming and has reduced knife wound injuries for process workers.
- Automation and robotics have reduced manual handling and associated injuries.
- On-farm safety has improved through the introduction of practices which reduce manual handling and companies see the potential of exoskeletons to empower manual workers and reduce injury and fatigue in both process and farmworkers.
- Digital technologies, such as sensors and drones, have reduced the need for manual checks, decreasing travel time and animal handling and therefore increasing both animal and staff welfare.
- Increased use of animal data has also reduced the risk of injuries for employees through less animal handling. It has also increased animal welfare because real-time data permits early intervention when problems are identified.
- New cooling, processing, packaging and transportation technologies and processes have improved food hygiene and food safety for the consumer.
- New practices and systems have triggered reviews of safety in some companies resulting in better practices.

2.1.6 New markets

Co-innovation projects have opened up new markets for companies, particularly export markets. Southeast Asia is a particularly promising market. New processes and technologies have increased trading options, for example:

- The predictive shelf-life tool coupled with new chilling processes (which maintain the freshness and taste of meat without freezing for extended periods) enables trade with more geographically distant customers.

- Some companies have focussed on using MSA and organic and natural products to find new markets.
- New product development processes using innovation techniques enable greater agility and responsiveness to a range of customer preferences. The result is differentiated beef products, for example, hormone-free and antibiotic-free markets which are growing in the USA.
- Companies have implemented marketing strategies to meet specific customer preferences, for example changing the name of mince to ground beef for the Chinese market; including QR codes for customers to access provenance information for Chinese customers where product tampering is a problem.
- Companies have established direct relationships with retailers, food service providers, online retailers such as Ali Baba and Amazon Prime.

The combination of increased confidence and new technology in partner companies has resulted in benefits across the board in terms of finding different markets. Companies are exploring opportunities in Asia, USA and the Middle East, as well as developing differentiated red meat products to meet local customers' diverse preferences.

One company reports a 300% increase in exports. Another explains that international market development has increased the volume of beef for global offering from 100 tonnes per annum to over 2500 tonne per annum.

2.1.7 New products and services

Partners identify a range of new products enabled by research and technology associated with the Co-Innovation Program.

With improved product development processes focussed on customer preferences, they say that new products are continually coming online.

One company has reported that since the joining the Co-Innovation Program, its products have increased from 35 to 170.

There is also a greater appetite for experimentation. The agile processes and co-funding have provided the confidence and capability to try out products and processes to see if there is a market.

In essence, the new products have been enabled by:

- Better product development processes which have accelerated the production process. One company reports a reduction from 9-12 months to 3-6 months in development time.
- A greater focus on the customer and their unmet needs.
- Greater capability and risk tolerance.
- Technologies which have enabled the use of all parts of the carcass.
- Value-adding which has created ready meals, and seasoned meals.
- Cutting technologies which have enabled different ways of presenting products.

- Companies have found innovative ways to optimise the whole carcass because they have made it is safe, healthy, palatable and traceable.

There is also a suite of new services. A stock and station agency established a goat marketing service to address an identified gap through the activities undertaken as part of a co-innovation project.

Other companies report the establishment of services directly for consumers such as cooking education services for chefs and the provision of customer resources on the web site.

2.1.8 External collaboration

The companies agree that the Co-Innovation Program has strengthened the working relationship with MLA because it is based on a shared commitment. MLA has also opened the door to a range of other collaborations with, for example, research bodies, other like-companies, technology companies, supply chain companies and service providers with cross-sectoral expertise.

Partners report that:

- MLA has been very helpful in introducing partners in a timely, personalised manner that addresses the relevant challenge. They have a rich network of expertise.
- The quarterly meetings between co-funded innovation managers fuels cross-industry knowledge sharing.
- Some companies hold an annual R&D summit with MLA to explore collaborative goals and challenges.
- Cross-industry and company collaborations have been established to explore industry challenges and opportunities, for example:
 - A partnership with a technology provider to develop a digital farm management technology,
 - A partnership between companies to solve the problem of animal effluent in transportation,
 - Partnerships with Municipal Authorities to treat animal waste and produce biogas,
 - Partnerships with packaging companies, film companies and a paper firm to explore innovative packaging systems,
 - Partnerships with research institutes to research and develop new products, for example, a livestock management tool,
- MLA has also supported collaboration with other countries such as supporting a China discovery project through reciprocal visits.

Overall the companies are appreciative of the external collaboration opportunities which have resulted from engaging with the Co-innovation Program.

2.1.9 Internal collaboration

The co-funded Innovation Manager is often a catalyst for different divisions teaming up to work on shared challenges. There was broad agreement that the program had increased the quantity and quality of internal collaboration and internal projects.

The Strategy-on-a-Page is a facilitator of internal collaboration because it is 'whole of organisation' and brings managers and staff from different divisions together to work on projects.

The new processes and systems implemented as part of the program have helped to create a better culture and greater internal engagement.

2.1.10 Increased R&D

The Co-Innovation Program has inspired R&D projects with CSIRO and other research institutions for pure and applied research.

- Some companies have regular meetings with CSIRO and other research institutes to explore particular challenges, for example, around water preservations and reuse.
- The MLA Relationship Manager sparks ideas for R&D projects. They bring in ideas and suggestions for projects to address the challenges facing the company.
- One company says that before engaging with the Co-Innovation Program in 2017, they had no R&D initiatives, they now have six active collaborative projects.

"The relationship with MLA provided opportunities to test new technologies and to work with consultancies and universities on new research projects."

"Our relationship manager brought us ideas, and we have a wish list of 40-50 projects. He exposed us to projects that have worked for others. It built confidence. The outcomes are shared well."

2.1.11 Greater strategic focus on innovation

There is a noticeable improvement in innovation strategy among companies who continue to engage with the Co-Innovation Program. Early-stage partners typically start with the operational challenges and gradually lift their vision to the strategic. After several contracts, they start with strategy, then tactics then projects, rather than the other way around. This is evidenced by:

- The Strategy-on-a-Page, completed with the MLA relationship manager which articulates strategic ambitions, becomes more closely aligned to the organisational strategy in many companies.
- There is an increased understanding among employees of innovation, why it is essential, and how to adopt new practices and technologies.
- Companies are recognising the need for digital transformation and co-funded digital officers support many of the partners to make the transition.
- One company has dropped the requirement for a formal business case to participate in the program because the benefits are so clear to all. Innovation is an accepted part of the strategy.

"Innovation has become 100% part of our strategy, and we address it at every weekly meeting."

2.1.12 Improved industry innovation

"Our black holes are industry's black holes. The co-innovation program is like a skunkworks for the industry."

The partner companies work with MLA to identify the areas of need and, with the help of the relationship manager, frame projects to address them. They research, run trials and disseminate lessons to others in the industry. The relationship manager and a network of co-funded positions share the information in regular meetings so that other companies can participate in or replicate the trials.

Results of the projects are also shared through the MLA database, conferences, workshops and other forums.

Participants in the project are encouraged to open the doors to competitors and to share with them. Many companies accept that it is in their interest to build a robust Australian industry to compete with global companies and manufactured protein alternatives and so willingly work with other companies.

"Co-innovation projects are customised innovation (R&D) projects which solve enterprise problems, but also provide solutions for others in the industry. Co-Innovation partners provide the context for trialling and exploring on behalf of the industry as a whole."

2.1.13 Improved staff engagement

Attracting and retaining staff is a challenge for both producers and processors. Operational jobs can be physically demanding, and it can be difficult to find willing workers in regional locations. Several companies rely on temporary visa holders which creates high turnover. They say that they would prefer to employ locals to create greater stability and also benefit the community.

There is some evidence that participation in the Co-Innovation Program assists in attracting and retaining staff. Better systems, processes, practices and technologies are making the work conditions safer and less demanding. Quotes from interviewees about staff engagement include:

- ***We would have lost people without the Co-Innovation Program. It has definitely made it a better place to work. The data capture project has changed the culture, and on-farm employees are particularly engaged in contributing; bringing undergraduates in from four universities to show them the business."***
- ***"The technologies trialled and implemented create better, safer jobs for employees."***
- ***"There are so many projects going on. We have 60-70 projects on the go, and it flows through to the rest of the team. We have a graduate program, which works well across food science, finance, operations."***
- ***"The innovator awards are the most exciting part of the project. They are a way to recognise people and reward them. The whole project has increased engagement because it's built confidence and capability."***
- ***"The solar energy project has been one of the most positive projects we've worked on, and employees feel proud of it. Seeing the business improving makes people feel more engaged."***

- ***“The Innovation Manager did a lot of work on systems and processes. We looked at internal systems for environmental monitoring, human resources, work health safety, training and skills auditing.”***
- ***“We are working to make it a better, safer place to work, and the innovations are helping us.”***
- ***“The mere fact of participating in an innovation program, particularly about the environment and sustainability, increases staff pride in the company.”***

2.1.14 Increased innovation maturity

Innovation maturity refers to the capability of the organisation to generate and adopt new practices. It is underpinned by enlightened leadership, employee engagement, systems and practices for innovation and effective internal and external collaboration. Most companies say that there has been a tangible shift in innovation maturity, evidenced by:

- Increased focus on the customer
- Accelerated speed to market for new products
- Different types of innovation, for example utilities, water usage, sustainability, employee satisfaction, process customer experience
- The development of a high performing innovation teams to across all divisions
- The development of a learning mindset
- Increased capacity for adoption
- Increased momentum in research
- Increased confidence and bravery, feeling more secure because of the relationship with MLA

“MLA helped to clarify gaps and a process to increase buy-in and engagement from different business units to build on the smaller projects and develop a team strategy for innovation across the pillars.”

“MLA is like a bridge to better practice.”

2.1.15 Improved social impact

While it is difficult to attribute the social benefits directly to the Co-Innovation Program, interviewees identified a number of ways in which the community has benefitted:

- Several companies offer tours of their facilities to schools, and local clubs for excursions, education programs. Some offer workshops to teachers to encourage understanding of the industry.
- Many companies sponsor or host local events, such as Wingham Beef Week and producer days.
- Some of the project ideas relate to addressing community problems, for example, healthy eating for the aged.
- Most of the companies have strategies to employ the local community.
- Many also engage graduates and interns in partnership with universities.
- One company provides food for the local homeless shelter.

Some of the projects have provided social get-togethers for producers who can feel isolated, particularly during droughts and other stressful periods.

"As a result of the program, we've created employment where there is the highest unemployment in Australia. We have had lots of training groups through including indigenous, unemployed. Breeding associations and food groups have come through to build partnerships."

2.1.16 Improved supply chain relationships:

There is evidence of much-improved relationships with supply chain partners. The companies attribute this to:

- The co-funded positions whose role is to collaborate with supply chain partners.
- Having the technology to trace genetics through the value chain, which allows processors to provide feedback to the producers to improve breeding and nutrition processes.
- A recognition of the importance of a robust supply chain. ***"We ensure all parts of the supply chain are communicating."***
- Supplier Awards to recognise the top suppliers- ***"We focus on supporting and rewarding good suppliers-when they feel they are being supported by the plant and getting increased prices, it builds loyalty to get a continual supply of the quality product."***

"We have solid relationships with our partners. The technology and data enable us to give specific feedback to producers and we support them to improve the quality of the product. When they do well, we do well. We are exploring different business models for working with producers, including fairer payment calculations, so we can reward quality and provide incentives for others."

2.1.17 Elevating practices into the broader industry

The benefit of the Co-Innovation Program to the more general industry is the structure and discipline it imposes on participating companies as opposed to ad hoc enterprise innovations which are not tested by the wider industry. The Co-Innovation Program is a testing ground for ideas, and a means to disseminate the "how to" across the sector to encourage wider adoption and industry uplift.

The partner companies attribute elevated practices to:

- The personalised, face-to-face meetings with MLA and introduced experts. This program makes the results of research tangible and accessible.
- Providing training for producers and staff around issues which are vital to them.
- Research projects with universities.
- Introduction to outside expertise to broaden perspectives, for example, innovation training, leadership training for women.
- Producing and sharing "How to Manuals".
- Collaboration between co-funded positions and relationship managers.

"All of the industry is talking about the same things. We realise that our competitors aren't the processor next door. It's international companies and the manufactured protein that is coming on the market. We are committed to raising the whole Australian industry to compete in these markets."

2.2 Partner feedback about the benefit of partnering with MLA through the co-innovation program

The consultant asked participants to describe how the relationship with MLA specifically benefitted them.

The chart below represents the number of responses to the questions:

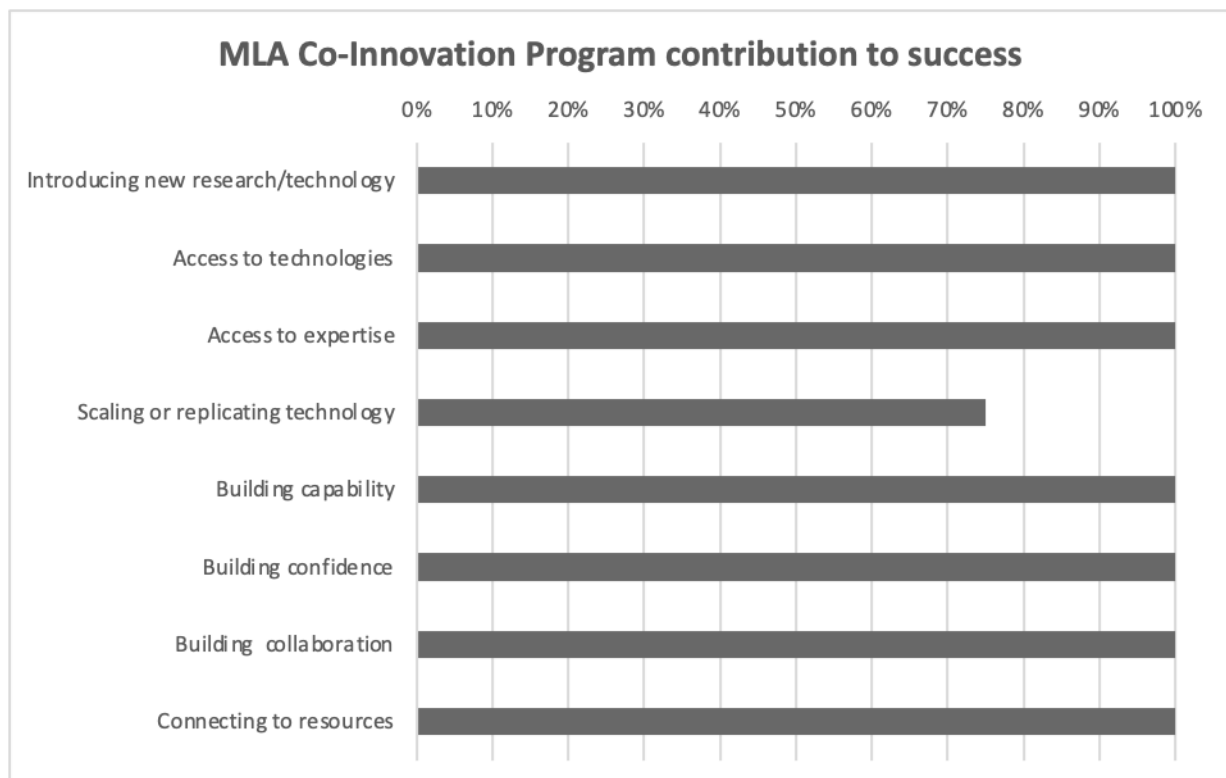


Fig.3 MLA Co-Innovation Program contribution

The discussion provides an analysis of comments by interviewees.

2.2.1 Overall benefit of MLA Partnership

Five partners said that they wouldn't have addressed innovation at all without the program. Eleven partners said that they would have addressed some of the challenges, but with fewer resources, not as quickly and with less impact.

They observed that MLA programs and projects, as well as internal projects, overlap, which makes it difficult to demarcate the effect of the Co-Innovation Program explicitly. However, all of the companies acknowledge that the co-funded positions, the Relationship Manager and access to resources were a catalyst for innovation action within their company.

While some companies say that they were initially sceptical about working with MLA, the experience has dispelled their doubts. The overall benefits of the program, according to partners, can be summarised under the following factors:

2.2.1.1 Embedding innovation and building capability

Rather than contracting out innovation, which was the habit of some organisations, the partner companies have embedded it and through the Strategy-on-a-Page, are increasingly making innovation a core pillar of their organisational strategy.

The co-funded positions bring professional expertise into the company, for example, innovation and digital skills. This enhances the capabilities of the whole operation as they implement processes and systems to improve product development, data management and human resource practice.

MLA provides access to external expertise, education, training and networks which have raised skill levels across the organisation, particularly among leadership.

2.2.1.2 De-risking innovation and becoming braver

While co-funding de-risks projects, it is also the support provided by Relationship Managers that builds confidence. Companies report that they are now able to try things, and if they don't work out, they capture all sorts of learning. For example, one company trialled robotics to discover it was not cost-effective. However, the experience taught them about data and sensors which they have applied to other projects. Relationship Managers "hold the hand" of the company and provides practical advice from other companies, which inspires confidence.

2.2.1.3 Accessing ideas, resources and knowledge through the MLA network

Companies interact with the MLA on several different levels. The co-funded positions have regular contact with their network and the Relationship Manager. Ideally, the Innovation Manager reports directly to the executive team, which makes visible the project work and ideas and ensures that the company provides appropriate support. The Relationship Manager meets with different levels of management in the organisation and helps develop the Strategy-on-a Page, which in many companies feeds into the organisational strategy. Some companies also invite the MLA executive team to meet with their team to align the company strategy with the national red meat plan.

The Relationship Manager typically brings new ideas, resources and research for the company to consider. Similarly, they will bring expertise to solve the challenges raised by the company. It is a two-way relationship.

2.2.1.4 Accelerating innovation and adoption

All of the companies acknowledge that the relationship with MLA accelerated their innovation projects. Rather than ad-hoc enterprise projects, the co-innovation process demands accountability and discipline through a project plan and business case, ongoing milestone reports attached to funding and documentation of outcomes shared on a public database.

While there was some concern with the skills required to complete the reporting, there was general agreement that it drove outcomes and ultimately, the adoption of better practices.

They also acknowledged that accessing the experiences of other companies prevented "reinventing the wheel." It provided a short cut to the adoption of new practices and technologies.

The specific advantages of being a partner with MLA through the Co-innovation program were:

2.2.2 Introducing new technology

Partners identified a range of technologies which were introduced by MLA Relationship managers and through the networks. MLA encourages companies to try new things.

One company observed that they preferred introductions through MLA rather than salespeople, who can become overly assertive.

Specific examples of technologies introduced through the program include:

- Enware Drying Technologies
- 3D printing
- Digital technologies for a smart farm
- Livestock Data Link (LDL)
- Dual Energy X-ray absorptiometry (DEXA)
- Plastic contamination sensors from the Danish Meat Research Institute
- Cold Carcass Grading Camera
- Blockchain

"It's a two-way process. We both (MLA and the Company) introduce technology and research and suggest ways to implement."

2.2.3 Access to new technologies

The Co-Innovation Program made it possible for companies to test and implement these technologies. Partners cited the following as examples of new technologies which have been introduced:

- DEXA and Shelf-life tool
- Bladestop and other safe cutting tools
- MSA grading
- Digital technologies

2.2.4 Access to expertise

Access to expertise is perhaps the most valued aspect of the Co-Innovation Program. Companies acknowledge the range and depth of expertise provided through the program.

They specify:

- Relationship Managers, who are trusted advisors and link to expertise and research
- Consumer insights, MLA reports and market data
- Technical experts
- Access to people and resources to help the change process, particularly valuable for small companies
- MLA's internal experts
- Cross-industry education and training programs, conferences,

"They are very good at connecting us to the right people. They're fast and effective."

2.2.5 Scaling and replicating technology

Many of the partner companies trial technologies to test their effectiveness and suitability. For example, some companies have introduced solar panels, water recycling and digital data capture systems. Once determined that the technology has potential, they may apply to MLA to support the roll out across the organisation.

Companies cited these examples of technology which has been scaled:

- Biogas operations
- Robotic product handling
- Digital technologies
- MSA and LDL

2.2.6 Building capability

Overwhelmingly the companies identified the value and impact of the co-funded specialists (innovation managers, digital officers, supply chain officers and marketing officers.) They described these positions as critical to the success of the projects and the company's innovation strategy for growth.

However, the partners stressed that:

- The positions need both a deep understanding of the industry as well as highly developed specialist skills (e.g. innovation, digital).
- They must be appropriately positioned within the company to have the necessary influence with the executive team and across the different divisions.
- They must be full-time and dedicated positions and not expected to operate on a part-time mode.
- The executive team must support them.
- They must be linked to an external network and supported by the MLA Relationship Manager.
- They must have highly developed interpersonal skills to work with different employees at different levels, internally and externally.
- The MLA relationship manager is essential to provide support and guidance for innovation, which is typically not available within the employing organisation.

When these conditions are in place, co-funded specialists are extremely beneficial in terms of building capability. Not only do they introduce new skills, but they also set up systems, processes and practices which impact on a broad range of staff. They facilitate internal collaboration as they bring different divisions together to work on a project. They also introduce new ideas and start conversations about ideas and problems amongst staff and leadership.

2.2.7 Building confidence

The Co-Innovation Program provides each company with a Relationship Manager who is a resource, a mentor and a connector. Individual relationship managers are highly valued by the company representatives. They come to the company as genuine partners in a collaboration. To be truly useful they need to have "skin in the game", that is sharing both the risks and the benefits of the project. As representatives of MLA and as guardians of public money, they are committed to getting maximum value not only for the individual company but also for the industry and the society.

Partners see Relationship Managers as critical to their confidence to embark on new projects.

They talk about the sometimes-daily conversations, the regular visits and the help provided in completing the reports. The Relationship Managers always seem ready to provide advice, connections and information and have been known to return calls and emails on a Sunday afternoon.

Some companies commented on the overwhelming workload of Relationship Managers and the difficulty of making contact because of the workload.

The longer companies are part of the program, the higher their confidence. Companies with longstanding relationships reflect on how their confidence has increased over the duration. The more projects they do, the more they feel that they can do.

2.2.8 Building collaboration

The partners say that MLA are "good introducers", they "open doors" and have facilitated a range of collaborative relationships with research institutes, other like companies, external consultancies, supply chain members. They assist in structuring the conversations which lead to projects and contracts. They are particularly helpful in brokering conversations with competitors and other industry partners.

The program itself drives collaboration. One of the requirements for participating companies is sharing the outcomes of the project, which results in cross-company and cross-industry conversations, research and projects.

2.2.9 Connecting to resources

Project funding is critical, and the companies appreciate that it is vital to the success of the partnership and the program as a whole. The projects would not have been completed or only partially completed, with less impact and less collaboration, without MLA support.

With access to capability, funding and expertise, companies thoroughly test new ideas, technology and practices so that meaningful outcomes are achieved.

MLA is the primary clearinghouse for red meat data and research. The Co-Innovation Program provides access, although some interviewees suggested that research information could be more accessible and less complex.

For companies who are not on the program, it is more challenging to find the right information to solve the problem.

2.3 Online survey feedback

Companies were invited to complete three online surveys:

1. Organisation Innovation Maturity
2. Organisation Innovation Priorities
3. Innovation Mindset

2.3.1 Organisation Innovation Maturity

There were twelve responses to this survey. It was set up as a quiz with points allocated for each answer. The average score for overall maturity was 55% with a spread from 20% to 73%. The overall scores suggest that there is room to develop the capability of all the organisations further.

Respondents were asked to indicate from 1 (low maturity) to 5 (high maturity) the accuracy of statements about:

- Leadership for innovation
- Innovation capability
- Innovation process and practice
- Vision and strategy for innovation
- Resources for innovation
- Amount and quality of internal collaboration
- Amount and quality of external collaboration

2.3.1.1 Observations from the responses about organisation innovation maturity:

- Half of the respondents say their leaders accept the need to drive innovation and provide support for innovation projects. They encourage the adoption of new practices and technologies.
- Concerning capability in the organisation, there is a spread of responses from levels 1-4 with a slightly higher selection of levels 2 and 3, suggesting that there is a growing awareness of innovation and some support for adopting new practices, but room for improvement.
- Perceptions of the innovation process and practice in the organisation vary across levels 1- 4 with a concentration of five responses at level 2, suggesting that there are some innovation projects, rather than embedded innovation practices.
- Half of the respondents indicated that risk is well-managed with two saying that experimentation is encouraged.

- Half of the respondents say that a vision and strategy for innovation is central to the organisation with four suggesting that it is lower on the priority list and two suggesting their company is future focussed.
- Ten respondents say there are resources available for innovating, evenly split between some and well resourced. One respondent describes their organisation as agile and has a holistic approach to innovation; while one says resources are not available internally.
- Two respondents suggest a low level of collaboration, two indicate cross-functional teams, two have knowledge-sharing platforms, but five say that internal collaboration is visible across the organisation.
- The majority (7) suggest that there is external collaboration with active partners or the supply chain. However, five indicate that there is little or no external collaboration.

2.3.2 Organisation Innovation Priorities

Nine respondents completed the survey to identify their priorities for innovation in the future.

They were asked to rank answers in order of importance for:

- Challenges for the future
- Barriers within the organisation
- Ability to innovate and adopt new practices
- Building a motivated and capable workforce
- Ensuring effective implementation and adoption of new ideas
- Generating good ideas in the organisation
- Collaborating within the organisation

2.3.2.1 Observations from responses to innovation priorities survey

- The highest-ranking challenges for organisations were *increasing productivity, economic conditions and environment and sustainability*.
- The highest-ranking barriers to innovation were *lack of resources, a focus on short term outcomes and top-down management*.

In relation to priorities:

- When asked to identify the importance of factors for innovation in their company, the top two were *external partners and ideas*.
- For building a motivated and capable work force, the highest-ranking factors were *innovation specialists and external sharing and benchmarks*.
- For effective implementation and adoption the highest-ranking item was *Resources for small impact projects*.
- For generating good ideas, the highest-ranking item was *incubators to grow ideas*.
- For collaboration all of the items were equally ranked, that is, *big picture view, innovation practices, internal sharing, partnerships and breaking down silos*.

2.3.3 Innovation Mindset

This survey is for employees within the company to get their perspective on innovation practice and culture within the organisation.

It is divided into two sections:

- The first section asks about individual strengths and motivation to accept change and innovation.
- The second section asks about the organisations support for their innovation efforts and contribution and the culture and mindset within the organisation more broadly.

Nine responses were received.

2.3.3.1 Individual mindset

The responses about individual mindset indicate that:

- There is strong agreement that innovation is important for the organisation and that individuals are mostly motivated to innovate, enjoy participating, collaborate internally.
- There is less agreement about collaborating externally.
- There is overall agreement that they are focussed on customer needs, challenge the status quo and feel comfortable to make suggestions.
- There is a strong sense that people are happy to help others, and slightly less happy to ask for help, to learn new things and use tools to expand thinking

In relation to their particular contribution, the majority indicate that they are the creators, the people who come up with solutions.

2.3.3.2 Company mindset

In relation to the company mindset, the responses were slightly less positive with a greater spread from strongly disagree to strongly agree about commitment to innovation. Most agreed that employees are encouraged to implement ideas.

In response to other questions about collaboration, impact, recognition, support, strategy, adoption, communication, proactivity and helpfulness there is a consistency in responses from individual organisations from disagree to strongly agree, suggesting some organisations have an overall supportive culture and at least one respondent believes their organisation doesn't have a supportive culture.

However, when asked whether employees are willing to take on new tasks and practices there is a break in the pattern, with three respondents agreeing, five neither agreeing or disagreeing and one skipping.

In response to an open-ended question about the biggest barrier to innovation in the company, the responses were:

- Supply of enough organic raw materials
- Decision making
- Lack of funds and possibly knowledge and exposure to innovation
- Implementation of new technology and practices in short time frame.
- Maintaining product presentation in consistency to meet consumer needs and market demands.
- Lack of cost effectiveness (due to the high labour cost) to compete in the international market
- Time and money constraints

- Practicalities and tough market conditions.
- Acceptance of change
- Lack of innovation strategy and management direction.

“We are a LARGE and COMPLEX FMCG in a very diverse playing field. Sometimes I feel like we are the Titanic, and the ship will never turn. Connecting across the organisation is difficult.”

2.4 United Nations Sustainability Goals

The Australian beef sustainability framework has been mapped against the sustainability goals. The following table uses those identified goals relevant to the red meat industry and provides examples of initiatives which address each goal.

Table 3: Goals aligned with example projects through the co-innovation program	
SDG2. Zero Hunger- End hunger, achieve food security and improved nutrition and promote sustainable agriculture	
<p>This is the central purpose of the red meat industry. It provides high quality protein for domestic and international markets.</p> <p>Partner companies identified ways in which they are responding to changing customer needs to meet a diverse range of needs.</p> <p>For example:</p> <ul style="list-style-type: none"> • Aged care projects to make red meat available as protein for the sector • Cooked products and ready meals available through supermarkets • Healthy beef snacking products to diversity how protein can be ingested • Increased exports to Asian markets • The whole program is designed to increase adoption of sustainable practices for producers and processors • Research and adoption of practices to adhere to religious practices. • Introduction of MSA to improve the quality and nutrition of red meat • Increasing production of natural, organic and biotic free red meat products • Blockchain technology for digital traceability of red meat products • Plastics detection for product quality 	
SDG6. Clean water and sanitation – Ensure availability and sustainable management of water and sanitation for all	
<p>Managing water use through recycling, reuse and sanitization is a key consideration for red meat companies.</p> <p>Examples include:</p> <ul style="list-style-type: none"> • The need to reduce and reuse water to reduce costs and maximise benefits is a priority for red meat companies. Some are also looking at how to access evaporated water. • Projects have helped to produce detailed mapping of properties, using water sensors to improve water management practices. • Water and land management data leads to better practices 	

<ul style="list-style-type: none"> • Some companies have invested in new wastewater treatment plants • Investment in the beneficial reuse of water strategies • The research and use of reverse osmosis for purifying bore water to provide potable water to plant and utilities
SDG7. Affordable and clean energy – Ensure access to affordable reliable sustainable and modern energy for all
<p>Australia's energy systems are undergoing a transition and like all other entities, red meat producers are investing in strategies for increased security, future reliability, lowering costs and lower emissions.</p> <p>Examples include:</p> <ul style="list-style-type: none"> • Reviewing consumables such as film to maximise recyclability • Reducing power usage through everyday interventions
SDG8. Decent work and economic growth – Promote sustained, inclusive and sustainable economic growth, full and productive employment
<p>All of the companies have invested in innovation to improve productivity and growth. New technologies are particularly improving working conditions for those in the red meat industry.</p> <p>Examples include:</p> <ul style="list-style-type: none"> • New methods of capturing animal data has improved worker safety. • The trials of exoskeletons prove that physical stress for workers can be reduced. • The use of real time data through IoT, drones and other technologies is improving business decisions and promoting growth and productivity. • Introduction of improved cutting tools to improve safety, for example Bladestop. • Many companies have introduced improved work processes and practices such as new product development, continuous improvement • Automated materials handling equipment such as Cobotics to improve safety and increase productivity • Transformation of some jobs, increased training and recognition
SDG12. Responsible consumption and production – Ensure sustainable consumption and production patterns
<p>Tackling waste, improving resource efficiency and encouraging sustainable consumption are of a concern to red meat producers.</p> <p>Collaboration with supply chain partners to develop new packaging, minimise waste and encourage reuse.</p> <p>Examples include:</p> <ul style="list-style-type: none"> • Sustainable packaging and shelf-life initiatives have been implemented, for example linerless cartons • Companies are researching and investing ways to improve waste streams. In some cases waste is being used to generate biogas in partnership with local government agencies and/or for use in the plants. • Increased support for producers to improve practices, through workshops, training, resources and access to research • Using new technologies to provide improved feedback to producers

<ul style="list-style-type: none"> Digital dashboards inform business decisions
SDG13. Climate action – Take urgent action to combat climate change and its impacts
<p>Linked to energy particularly, companies are investing in ways to reduce carbon emissions.</p> <p>Examples include:</p> <ul style="list-style-type: none"> The introduction of solar panels for energy production and decrease in carbon emissions Boosted pride among employees resulting from climate action Audits and refinement of work practices to reduce wastage The investment in biogas plants The use of environmentally friendly cooling systems using nitrogen
SDG14. Life below water – Conserve and sustainably use the oceans, seas and marine resources for sustainable development
N/A
SDG15. Life on land - Protect, restore and promote sustainable use of terrestrial ecosystems
<p>Examples include:</p> <ul style="list-style-type: none"> Water, land and animal data will lead to sustainable farming practices Workshops to encourage adoption of better land and animal management practices The use of phytoremediation (the use of plants to clean up polluted soils) as a more sustainable way to manage wastewater Research and development of humane animal management systems
SDG17. Partnerships for the goals – Strengthen the means of implementation and revitalize the global partnership for sustainable development
<p>Partnerships are essential for progressing the Sustainable Development Goals and the co-innovation program is based on developing partnerships between companies and MLA, between organisations, between research institutes and companies.</p>

3 Discussion

The red meat industry is changing. The focus is shifting from red meat as a commodity to red meat as an eating experience for domestic and international consumers with diverse tastes. Innovation across the organisation has enabled this change. Producers and processors are moving closer to the consumer with an increasing concern for the quality of offering rather than only the quantity of sales.

Relationships with supply chain partners are also changing. Now, companies can have long term, direct relationships with producers, bypassing the sale yards. New technology and data have made the communication of specific and constructive feedback to suppliers possible. Many companies actively support suppliers to improve the quality of red meat products. In some cases, "payment for quality" models have been adopted to provide incentives to producers.

Companies are more willing to share with other like-companies, recognising that competition from international companies and emerging manufactured protein markets is the challenge. Lifting the whole Australian industry needs to be the priority, rather than competing with the producer or processor next door. Companies interviewed in this research are extending their reach to form partnerships with technology companies, universities, ancillary industries and service providers to develop fit for purpose adaptations of technology and ideas sourced elsewhere to accelerate adoption. Companies are aware of the need for building capacity to transform their operations particularly in innovation, adoption, leadership, data and digitization.

Partner companies are exploring ways to reduce their carbon footprint not only to cut costs and improve the environment but also to respond to the growing concern of consumers, who increasingly purchase for provenance and sustainability.

Partners describe the Co-Innovation Program as an enabler of change. They report that it can respond quickly to industry needs. It focusses on the practical concerns of partner companies as well as the strategic concerns of the industry. The solutions benefit not only the partner company but also the whole sector. The Co-Innovation Program brings the industry together and introduces capability, expertise and technology as needed.

The evidence from this report demonstrates that the model of co-innovation is highly valued and valuable to the industry as a means to encourage innovation and adoption.

To improve, replicate or scale the model it is important to understand why it is successful and the principles upon which it is built.

3.1 The Co-Innovation Program model

The co-innovation model is a framework for achieving a suite of cross portfolio outcomes which directly address the company's strategic needs and industry priorities. The model comprises:

- a co-funded Innovation Manager in the partner organisation,
- a dedicated MLA Relationship Manager,
- facilitated networks of co-funded positions,
- access to targeted research and capability,
- a Strategy on a Page with 3-5-year road map to align with organisational objectives
- access to funds for initiatives and projects. The project funds may come from the MDC, levies, internal or other external sources.

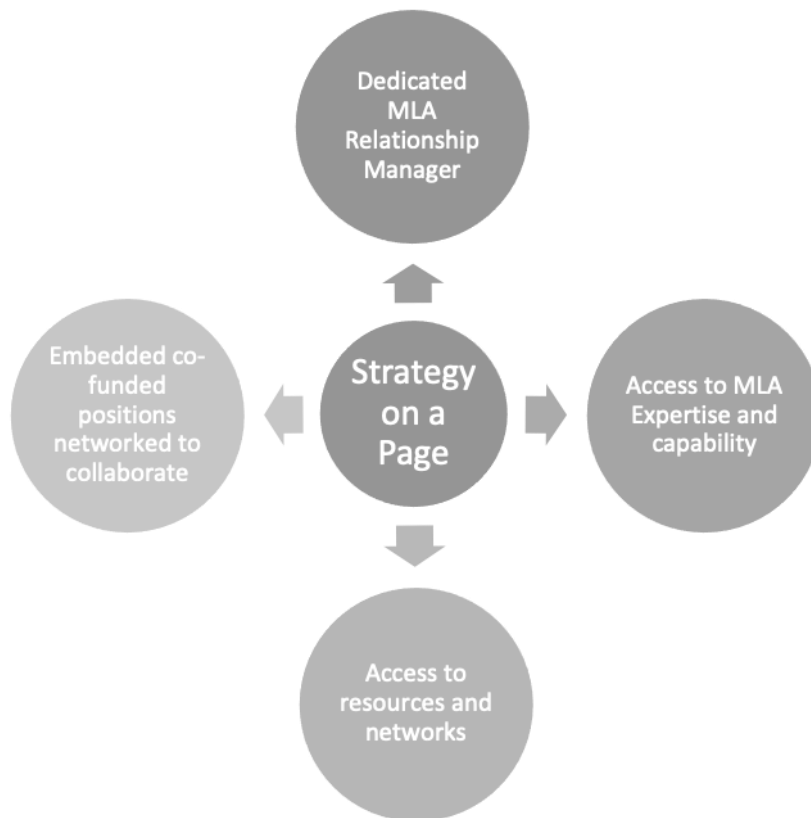


Fig.4 The Co-Innovation Program elements

3.1.1.1 Co-funded positions

Red meat producers, processors and service providers apply for co-funding of positions and projects to address challenges within their business. They receive 50% of salary costs to employ an innovation manager, whose primary focus is the development and implementation of an innovation strategy that supports the business objectives of the company. This innovation strategy should extend to supply chain partners, including customers and producers.

Innovation Manager Position Description

- Develop and align innovation strategy with the company's current business strategy
- Develop and manage a range of innovative measures as appropriate to the strategy
- Ensure the scope of the innovation strategy extends to producers and suppliers to drive maximum company and value chain benefit.
- Assessment of the company's existing innovation capability and implementation of capability building and change management strategies as appropriate
- Instigate innovation idea generation and filtering/feedback processes as appropriate
- Develop and coordinate an agreed number of innovation projects that will be ongoing during the initial three-year period
- In collaboration with MLA, determine appropriate funding mechanisms for agreed projects
- Support and coordination of project teams

- Develop or evaluate innovation tools for facilitation of innovation
- External relationship management with research partners, research providers, equipment suppliers, processing sector and value-adding sector as appropriate
- Participate in MLA organised network meetings and collaborate with other industry Innovation Managers as appropriate
- Attend selected MLA organised training and conferences and evaluate and report to the remainder of the Australian red meat industry

Innovation should be the focus of the role, rather than an "add-on". Innovation managers are ideally positioned close to the executive and have a strong allegiance to the MLA Relationship Manager. They should also network with co-funded positions in other companies to share insights and challenges and seek other networking and development opportunities.

3.1.1.2 MLA Relationship Manager

Each company has a dedicated MLA Relationship Manager. This person requires highly developed interpersonal skills and industry credibility.

Their role is to build innovation capability in the company by guiding and mentoring the innovation manager, facilitating an innovation strategy, linking the company to relevant research, expertise and technologies, managing co-funded projects on behalf of MLA and sharing outcomes across the industry.

3.1.1.3 Strategy-on-a-Page

The innovation manager and relevant managers and executives develop the Strategy-on-a-Page (SOAP). The more buy-in from the executive and the greater alignment to company strategy, the more successful the innovation program. The SOAP identifies the company's challenges and opportunities and identifies actions that are needed to address them over a 3-5-year period. It provides a road map for cross-portfolio initiatives and collaboration.

3.1.1.4 Co-funded projects

From the strategy, projects which are suitable under the program are proposed for co-funding. The co-innovation model favours a portfolio approach which integrates different aspects of a significant challenge, rather than fragmented, small projects. They may be:

- New products and markets
- Development and adoption of new technologies and production processes
- Application of science and knowledge to improve products or process
- New business systems and models (e.g. value chain innovation; new strategic alliances)
- Organisational culture and capability, particularly in the area of building innovation capability.

Partners within the program will have access to a full range of MLA information and resources. The projects are like testing grounds for new ideas and the results from the project are shared through MLA networks and data bases.

3.2 The intangible benefits of the program investment

As discussed in the previous section, the impact of the program for participating companies has been significant. Each company could attribute a positive change in all or the majority of the indicators. Companies could measure benefits in terms of productivity, customer experience and safety. They also could attribute intangible benefits to the program:

3.2.1 Intangible benefits

While some companies are beginning their journey, others have implemented rapid change with the support of the program. Still, others have evolved over a longer engagement period. There was some variation in the extent of the benefit according to the length of the engagement. However overall there were clear intangible benefits as explained below:

3.2.1.1 Organisational culture

Capacity to innovate depends on having the right mindset, capability and practices to create a change-ready culture for the adoption of new methods and research. The Co-Innovation Program is perceived as a significant catalyst for partner companies. The program offers partner companies opportunities to develop their skills in innovation and business improvement through university courses, workshops, conferences.

Partners confirmed that the co-funded positions and projects had driven capability uplift and an innovative mindset through increased skills and tools, access to research, increased confidence, and the introduction of new ideas and technology. Survey responses suggest that there is a growing awareness of the need for innovation and the practices that support it.

Several organisations have invested in business improvement systems and practices which build the culture and mindset for innovation and have accelerated product development and innovation.

Companies are aware of the importance of engaging employees at all levels to accelerate adoption. At the start of the journey, some companies implemented an ideas management system to capture ideas from employees. Five years down the track, they maintain that they don't need it because employees feel free to speak up and trust they will be heard.

There is evidence also of a meaningful shift to the use of data and digitisation to inform business decisions and manage operations. In many companies, this change in culture extends to every employee and the relations with the supply chain.

3.2.1.2 Leadership

Companies with a high-level commitment to and deep understanding of the program goals have gained the most from the partnership. Innovation has become a central pillar of their strategy and the innovation manager reports directly to the executive. While this is true of many companies, there are those whose executive are not sufficiently engaged.

The Co-Innovation Program challenges leaders to take risks to try out and adopt new ways of doing things. The interviews suggest that positive leaders have been open to suggestions from the innovation manager and the relationship manager, they have supported their staff when the process falters, and they know when to change course.

In a small minority of companies, the change in leadership perspective has been slower. There have been misuses of funds and co-funded positions; there is a resistance to outside influence and suspicion about sharing. The evidence suggests that a more extended engagement with the program will help to overcome these barriers. It may also be necessary to screen companies to ensure that they are participating in the program for the right reasons and intentions.

It is notable that in companies which are using more data and technology, leaders report that they are making better decisions and adapting their management style to be more open to new ideas from all employees.

3.2.1.3 Employee experience

Many processors and producers experience difficulty in attracting and retaining staff. Jobs are physically demanding and often in remote locations. The Co-Innovation Program has provided benefits to improve the employee experience.

Project outcomes have positively impacted the safety and quality of work in many companies. For example, there are fewer injuries and a more inclusive culture with better job prospects. Employees at all levels are engaged in developing and implementing change that matters to them. Increasingly, companies seek to recruit from the local community.

Some companies said that participation in an "innovation program", particularly in projects addressing climate and sustainability, is a source of pride and itself boosts employee engagement.

3.2.1.4 Customer experience

The focus of companies has shifted from product to creating a positive experience for the wide variety of customers, here and internationally. With increasing competition from manufactured protein, Australian red meat producers and processors recognise the need to identify and provide high-quality products and service for a broader range of customer tastes.

Provenance is an issue for many customers, so digital solutions to verify origin are now more common, which also minimise the risk of product tampering.

Companies also are using digital platforms to reach the customers in a two-way conversation directly. They are also engaging through platforms, such as the Steak School, to educate customers in getting the best value from their products.

3.2.1.5 Collaboration

Collaboration is essential for innovation, adoption and transformation. The Co-Innovation Program is not only a collaboration itself; it also promotes all types of partnering. For example:

- Co-funded positions collaborate with other companies and share ideas and information
- Relationship managers introduce companies to expertise and research from extensive MLA networks
- The vast majority of companies are now engaged in multiple external collaborations with research institutes, other like companies, the supply chain and service providers
- Companies have developed internal collaborative processes and projects
- The co-funded positions with a cross-functional responsibility, bring different divisions together to work on shared problems.

3.2.2 Innovation maturity

It is clear that the deeper and longer the relationship with the Co-Innovation Program, the more extensive the benefits.

As the program has evolved from its inception in 2007, the key roles has evolved, and the company focus has expanded. For those companies who have engaged over three or more stages, a growing maturity is a clear outcome.

The maturity journey typically requires progression from operational to strategic to collaborative to transformational. The focal points of the engagements broaden from local, to supply chain to industry.

The heightening of enterprise ambitions and increased maturity has implications for the role of both the MLA Relationship Manager and the co-funded innovation manager and the service that they provide. In early engagements, they primarily provide administrative support; however, as the company aims become more complex, the role of both the relationship and innovation manager has to evolve and become more strategic and sophisticated.

3.3 Recommended enhancements to grow the value of the program for the industry as a whole and for individual enterprises

While companies support the co-innovation program in its current form, the interviews also revealed some areas where improvement was needed. They were asked what MLA could do in the future.

3.3.1 Co-funded specialist positions

Overall companies were satisfied with the current personnel in the co-funded specialist positions. However, some reported that they had some negative experiences previously.

External support for co-funded positions is critical because employing organisations don't typically have sufficient expertise in innovation, digital and business improvement strategies. They suggested strengthened support for co-funded specialists to ensure that they have:

- A balance of red meat technical and specialist innovation skills.
- Strong support from the MLA Relationship Manager.

- A strong network of peers with regular interactions, meetings and training for skill development and knowledge sharing.
- Access to training, tools and ideas to accelerate better innovation.

3.3.2 Project administration

While companies acknowledge the need for accountability, they had suggestions for simplifying the reporting and contracting. Progress and final reports are complex to complete and often require skills the company doesn't have. Similarly contracts and payment processes are, for some, difficult to understand.

The finished reports are often hard to access and digest. Partners preferred face-to-face meetings, case studies, manuals and short videos as a means of acquiring and disseminating information.

Companies suggested:

- Clearer advice about processes for payment and contract requirements.
- More streamlined report templates particularly for progress reports.
- Short, accessible summaries of research to highlight new ideas. These could include links to more detailed research.

3.3.3 MLA Relationship Managers

MLA Relationship Managers are greatly valued both in theory and in practice. Partners spoke with warmth and admiration about their own Relationship Manager. Partners suggested pairing relationship managers so the workload can be shared and to ensure that they are more available. They also suggested creating more pathways and relationships to broaden access to MLA expertise and research.

3.3.4 Alignment between innovation and organisational strategies

In some companies the Strategy-on-a-Page did not drive change across the company because it was not generated at a sufficiently high level. Similarly, the co-funded innovation manager was not as effective because they were in a non-strategic role within the company.

It is clear that the executive team needs to be engaged early and often to realise maximum program value. The Strategy-on-a Page should be completed with senior executives, as well as cross-divisional personnel, and align with organisational strategies.

3.3.5 Increased innovation focus

Companies are always chasing innovations, and they see this program as a positive initiative, as long as it aligns to company priorities and the MLA "doesn't push too far, too quickly."

Suggestions for increasing innovative outcomes include:

- The projects undertaken should drive transformation. There should be an emphasis on guiding companies towards a portfolio approach with big impacts.

- While individual project ROI is important, the Co-Innovation Program is about capability. The benefit comes from trialling new things and disseminating the results. Reporting should demonstrate that funds were spent well to increase organisational performance and acknowledge capability and innovation maturity improvement.
- Training and education for Innovation Managers is vital so that they can embed innovation practices in the organisation

3.3.6 Data and insights

There was a request for more intelligence delivered in a more accessible way. Specifically, partners requested information about international trends and potential growth opportunities in the domestic and international markets.

MLA is a complex organisation, and companies suggested more user-friendly ways to access research and expertise, especially for smaller and regional companies.

3.3.7 Metrics

Companies are challenged by how to capture the value of their innovation projects. Few have systems but all would like to have better methods for measuring against metrics. Some partners suggested that the Co-Innovation Program could set up a project to develop a Toolbox to provide the means to measure and report strictly from an innovation perspective. It would report the direct benefit to the company and the indirect benefit to the industry.

3.3.8 Increasing outreach to the industry

Uplifting the whole sector through co-funded initiatives is a critical factor for the partners. They suggested that the program should pursue ways to extend the reach to smaller and/or regional companies to support adoption and to encourage collaboration. Specifically, there is an urgent need to support companies make the transition to digital technologies.

4 Conclusions/recommendations

4.1 Conclusions

The red meat industry is a vital part of the agriculture industry and Meat & Livestock Australia (MLA) is the premier resource for research and innovation. It is in a prime position to support and facilitate actions to help the industry rise to the challenge of change. A recent report from the Australian government makes a compelling case for focussing on the systems and culture for innovation in Agriculture. It paints a picture of a volatile future which needs agile and confident systemic responses.

Looking to the future, Australian agriculture faces unprecedented change, driven by various factors, such as changing global markets, increasing international competition, technological disruption,

*transforming industry structures, climate variability and change, water scarcity, and increasing threats from pests and disease.*³

According to the report, a system of innovation for Agriculture is required that is cohesive, coherent, resilient and globally recognised, which includes the need for:

- Cross-industry, cross-sector strategic collaboration
- The capacity for new ways of working
- New ways of investing
- Achieving both incremental and transformational innovation
- Building the culture and mindset for innovation-overcoming risk averseness, territoriality, and the lack of diversity
- Better engaging regional centres in innovation to understand the benefits and encourage a higher level of adoption
- Developing the digital infrastructure and regulatory environment

The Co-Innovation Program shares these goals, and for the past thirteen years has been working with red meat companies to achieve them.

The Co-Innovation model has made a significant contribution to a red meat sector innovation system and is well placed to meet the challenges of the future. With further evolution and an even sharper focus, the Co-Innovation Program can continue to be a leader in Agricultural innovation.

The specific stakeholder challenges for the future which the program can address are:

- MLA seeks to accelerate innovation within the industry, when there is no shortage of ideas and research, but the adoption lag time is ten years and widening.
- The industry needs ways to discover and test new practices and technology so that they can be customised for use within the Australian industry and picked up widely by the full range of producers and processors, particularly small-to-medium enterprises in regional and remote areas.
- Companies are challenged every day and, in every way, to adapt to constant and unpredictable change which impacts on their operations, their revenue, their workforce and their business model.

4.2 Recommendations

This project has clarified the principles and the critical success factors of the Co-Innovation Program to enable scaling and replicating in other program areas. It has identified a suite of recommendations for strengthening the program to allow for its growth.

³ Agricultural Innovation-A National Approach to Grow Australia's Future, Ernst & Young (EY) March 2019, pp2

4.2.1 Strengthening and expanding the Co-Innovation Program

4.2.1.1 Training and development for Relationship Managers

The support from MLA Relationship Managers is essential to the success of the model. They introduce ideas, research and insights. They help to discover gaps and to define them. With a deep understanding of the challenge they can link to specialist expertise and research which is tailored to the specific needs of the company, while seeing opportunities for replicating and scaling across the industry.

It is clear that Relationship Managers have to be agile and flexible in their approach as the needs of the companies evolve. Our study shows that with each phase of engagement the role of the Relationship Manager changes becomes more demanding.

It is therefore necessary to provide support and development to these key people. They typically come with red meat technical skills and a good understanding of the administrative requirements of the process.

It is therefore recommended that just in time training be provided to develop expertise in up-to-date skills for innovation, collaborative partnerships, strategic planning and leadership to enable growth in the role with the program demands.

It is also recommended that the workload and working arrangements of Relationship Managers be reviewed to ensure that they are being well utilised and sufficient in number to provide the dedicated service required, particularly if the program expand to regional and remote companies.

4.2.1.2 Streamline reporting and contract processes

Companies acknowledge that reporting is essential for accountability and for driving outcomes. However, reporting procedures for the Co-Innovation Programs demand skills that most companies do not have. Not only that, the reports of innovation projects are also often difficult to access and to understand, which means much of the valuable work is not communicated to others.

It is therefore recommended that the reporting and contract processes for the Co-Innovation funded projects be reviewed and streamlined so that company staff can produce reports with greater ease and the outcomes of projects can be better disseminated.

4.2.1.3 Streamline access to research

MLA is a treasure trove of excellent research. One of the advantages of the Co-Innovation Program is that Relationship Managers can help companies access information for specific challenges. However, there is still a need for greater communication about and access to relevant research. There is a demand to increase the points of access to research and make visible the data about market trends both here and internationally.

It is therefore recommended that the access to MLA research be reviewed to make it more available to companies who may not have high level research skills currently required.

4.2.2 Expanding reach and impact of the Co-Innovation Program across the industry

4.2.2.1 Develop a collaboration and engagement strategy for small-to-medium companies

While the program has included a large section of the industry in financial weight, it is important that all producers and processor levy contributors have access.

Large companies have had long-standing and successful engagement with the program and have played a critical role. They have the scale and resources to try out new technology, digitisation and new methods and practices. The results of their trials are then shared with the wider industry.

Smaller processing companies have made significant contributions in developing niche markets and integrity systems. However there are barriers of entry for many smaller processors and producers who are more remote, have fewer resources and are more risk averse. They find it hard to customise research to their particular need and lack the confidence to experiment.

Examples of successful engagement with producers and supply chain partners have been revealed in this study, such as localised, relevant producer workshops and coaching. These approaches need to be amplified and supported to extend the reach of adoption.

It is recommended that collaboration opportunities to test ideas and practices be more available to smaller processors and producers to extend the community of innovation to include those companies who are not at the forefront of the industry but are willing to engage.

4.2.2.2 Develop a metrics toolbox for capturing value

One of the challenges of this project was capturing the value of the program from individual companies. Few had systems in place for measuring the benefits of individual projects or the program overall. Innovation value is difficult to measure, however there are metrics models available which can be applied to all projects.

It is therefore recommended that the Co-Innovation Program establish a project to develop a Good Practice Guide to metrics in the Red Meat Industry to be widely available. The tools would provide real time data and allow for adjustments and refinements as needed.

4.2.3 Strengthening partner company internal buy-in and capability

4.2.3.1 Develop a strategy for program engagement of senior leadership in partner companies

This study has provided substantial evidence that the Co-Innovation Program has created both tangible and intangible benefits for participating companies. It is a proven model for encouraging innovation and accelerating adoption of new research, technology and practice.

The level of benefit derived depends on the level of commitment by the company, and the clarity of aims and expectations provided by MLA. Not every company has the high-level support and understanding required to maximise the benefits.

It is therefore recommended that a strategy for leader level engagement to communicate and reinforce the responsibilities of both companies and of MLA to ensure that both parties get optimal value.

It is also important that Strategy-on-a Page be widely adopted by companies to ensure that challenges of significant strategic impact are addressed and are aligned to both company strategy and MLA goals.

4.2.3.2 Training and development for co-funded positions

Co-funded innovation managers are a critical success factor for the project. They provide focus and are a dedicated resource to drive discipline and outcomes. They introduce capability, ideas and research and provide support for processes of adoption.

Innovation Managers need industry credibility, business improvement skills and high-level interpersonal skills for both internal and external collaboration. They need to stay informed and motivated.

It is therefore recommended that co-funded innovation managers (digital, supply chain and marketing) have access to development to keep abreast of the tools and processes for innovation and collaboration and to develop deep bonds with others in similar positions to increase the flow of ideas and insights within the industry.