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Kellogg Rural Leaders Program 2014
Phase 2 Project Proposal

Penny Schulz

Project title: Building a successful extension framework for Livestock Data Link

Collaboration: Meat & Livestock Australia (MLA)

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Building a successful extension framework for Livestock Data Link in the Australian Beef Industry

Table of Contents

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Background to the paper and the author

The Kellogg Rural Leadership Program is New Zealand's prestigious development program for new and emerging leaders of New Zealand's rural sector. The Kellogg Rural Leadership Program consists of three phases, with the first and last phases delivered as intensive, residential courses, and the middle phase being an individual project unique to each program participant.

This paper details the Phase 2 project of course participant Penny Schulz, a member of the Kellogg Rural Leadership Program delivered in 2014. Although the program is delivered in New Zealand, MS Schulz is an Australian who won the ANZ and Australian Beef Industry Foundation (ABIF) Scholarship to take part in the Kellogg Program.

Penny Schulz runs a sheep and beef operation in the Upper South East district of South Australia with her husband Jason and mother-in-law Joanne. They produce first cross ewe lambs, prime lambs and have recently started a beef seedstock operation Raven Limousin & Limflex. Ms Schulz also works off-farm managing projects and delivering workshops for the sheep, beef and dairy industries, along with casual university teaching, with her particular expertise in the fields of animal genetics and business management. Penny has a background in livestock industry extension and postgraduate qualifications consisting of a Master of Science in Agriculture and a Graduate Certificate in Rural Science majoring in agricultural consulting.

In addition to being a current and founding board member of Livestock SA, South Australia's advocacy body for the state's sheep, beef and goat producers, Ms Schulz has also held several livestock industry youth positions in the past and was the state winner of the 2010 Cattle Council Rising Beef Champion program.

In 2014 Penny went on to win the South Australian RIRDC Rural Women of the Year, as well as ANZ ABIF Kellogg Rural Leadership Program delivered in New Zealand. This has led to Penny being a newly appointed director of the Australian Beef Industry Foundation (ABIF), a charity organisation that provides scholarships and opportunities to aspire careers and leadership in the Australian beef industry.

Due to the nature of Ms Schulz's scholarship, she chose a project topic that was of importance to the Australian beef industry. Rather than tackle a new topic for research, resulting in a small project in isolation, Ms Schulz chose to work on a small component of a larger livestock industry research and development project being conducted by Meat & Livestock Australia (MLA)*. The MLA project of interest was Livestock Data Link (LDL), a web-based application that links sheep and cattle slaughter data from the National Livestock Identification System (NLIS) database to enable producers to analyse their carcase performance in relation to market specification compliance, as well as be linked to tools, reports and solutions addressing non-compliance issues.

The Livestock Data Link (LDL) project is currently at a stage of extending the technology to producers for adoption and with Ms Schulz's strong background in livestock industry extension, she chose to investigate and make recommendations for an extension framework for successful adoption of LDL for her Phase 2 Kellogg Program project.

LDL is available for both sheep and cattle carcase feedback but this paper focuses on the extension framework for beef producers. However, many of the final recommendations would also be relevant to the sheep sector.

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** Meat & Livestock Australia (MLA) deliver marketing and research and development services to Australia's cattle, sheep and goat producers. The majority of MLA's funding comes from transaction levies place on the sale of livestock, with matched funding from the Australian Government on most R&D projects. MLA also creates opportunities along the livestock supply chain to build demand and productivity, as well as provide services, tools and information that benefit livestock producers.*

Acknowledgements

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1. Livestock Data Link

What is Livestock Data Link?

Livestock Data Link (LDL) is a new initiative from Meat & Livestock Australia (MLA) that aims to enhance the exchange and utilisation of carcase performance information by businesses within the red meat industry. LDL is a web-based application that links slaughter data from the National Livestock Identification System (NLIS) database with analytical tools, benchmarking reports, as well as LDL's "Solutions to Feedback" library.

Up to 25% of cattle and somewhere between 30-65% of lambs in southern Australia miss their target market specifications at slaughter. Non-compliance of market specifications is costly to both the producer and the processor, making it one of MLA's priority areas for improvement over the next three years.

Livestock Data Link will enable producers and processors to analyse carcase feedback information in relation to compliance to market specifications and performance outcomes will be linked to a library of resources and solutions on how to address non-compliant issues on-farm. In the future the application will also be integrated with animal health statements to link with issues of disease condemnation or contamination.

Once LDL has been broadly taken up by the red meat sector it has the potential to increase compliance, reduce carcase value losses and potentially integrate with other systems that could help drive genetic improvement in herds and flocks.

At an industry level, LDL offers an opportunity to analyse feedback data to understand and measure carcase performance across the board and identify areas that can be targeted for increased education or R&D investment.

Although LDL is available for both sheep and cattle carcase analysis, the investigation and findings of this paper will be focused on the beef sector. However, it is likely that my findings will be transferrable to the sheep sector.

The Beginnings of Livestock Data Link

MLA conducted a number of research projects in 2011-12 to identify the potential benefits of the LDL program on a national basis. Financial losses of non-compliance with market specifications were difficult to quantify, however, research conducted at the processor level across four significant markets showed that the Australian beef industry loses an estimated $127 - $163 million per year by producing cattle that do not meet customer requirements.

The losses in carcase value come from carcase downgrades for out of specification cattle ($51 million per year), carcase condemns ($64 million per year) and animal health and disease resulting in losses of meat and/or offal value ($12-49 million per year).

This research showed that some market specification categories may have losses of up to $280 per head as a result of discounts, which is passed back to the producer in the form of a financial penalty. Qualitative feedback also suggests that there are significant potential benefits if improvements can be achieved by reducing the loss of meat and offal value due to animal health and disease issues.

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In addition to reducing the incidence of non-compliance and discounts, LDL has the potential to enhance their carcase value within the market specification or recognising a more appropriate target market for the cattle.

Furthermore has the ability to analyse chiller assessment and Meat Standards Australia data, not just slaughter data. LDL will have linkages between the MSA database and the NLIS database to enable data collected at the processor to be uploaded to the MSA database.

LDL will be able to deliver a standardised carcase feedback solution on a national level and provide a single point of access to carcase feedback for industry participants through the secure NLIS database. This will also provide a platform for the analysis and benchmarking of a herd, or much broader analysis at a regional, state or national level.

Analysis of Carcase Performance

LDL contains a series of generic industry grids to enable carcase performance to be analysed based on a specific target market (e.g. Lightweight Yearling, JapOx, Grainfed etc), as well as provide users with the ability to create their own customised grids, based on individual processor specifications.

LDL analyses individual carcase performance against the selected grid and calculates the cost of non-compliance for each trait. This is the 'opportunity cost' of not meeting the targeted market specification, and is calculated based on the discounts that would be applied for falling outside the 'sweet spot' on the grid (see Figure 1).

Figure 1: Livestock Data Link Carcase Analysis example

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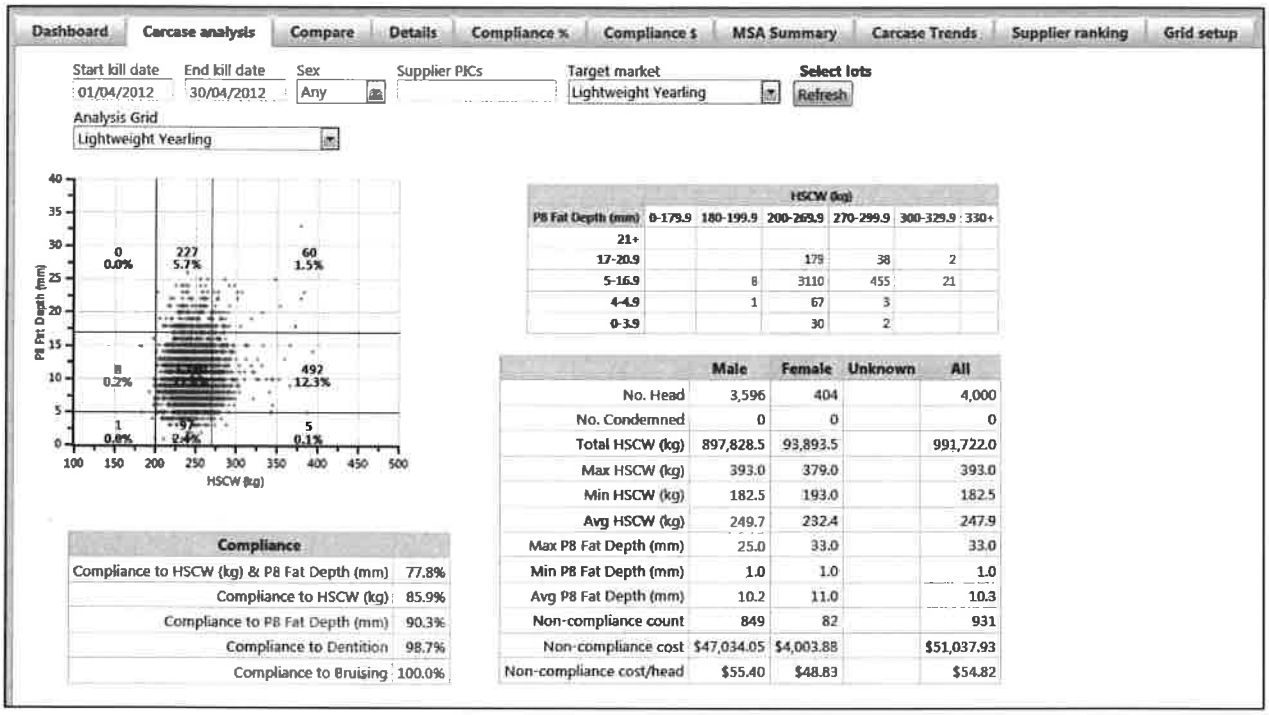

HSCW (kg)						
P8 Fat Depth (mm)	0-179.9	180-199.9	200-269.9	270-299.9	300-329.9	330+
21+						
17-20.9			179	38	2	
5-16.9		8	3110	455	21	
4-4.9		1	67	3		
0-3.9			30	2		

Compliance	
Compliance to HSCW (kg) & P8 Fat Depth (mm)	77.8%
Compliance to HSCW (kg)	85.9%
Compliance to P8 Fat Depth (mm)	90.3%
Compliance to Dentition	98.7%
Compliance to Bruising	100.0%

	Male	Female	Unknown	All
No. Head	3,596	404		4,000
No. Condemned	0	0		0
Total HSCW (kg)	897,828.5	93,893.5		991,722.0
Max HSCW (kg)	393.0	379.0		393.0
Min HSCW (kg)	182.5	193.0		182.5
Avg HSCW (kg)	249.7	232.4		247.9
Max P8 Fat Depth (mm)	25.0	33.0		33.0
Min P8 Fat Depth (mm)	1.0	1.0		1.0
Avg P8 Fat Depth (mm)	10.2	11.0		10.3
Non-compliance count	849	82		931
Non-compliance cost	$47,034.05	$4,003.88		$51,037.93
Non-compliance cost/head	$55.40	$48.83		$54.82

LDL also reports on the total number of animals that are 'underspec' and 'overspec' for each trait (see Figure 2), and provides an option for downloading individual animal slaughter data for further analysis. The cost of non-compliance is calculated for each animal, providing a detailed analysis of the impacts of non-compliance across each carcase trait.

Figure 2: Livestock Data Link Carcase Compliance $ example.

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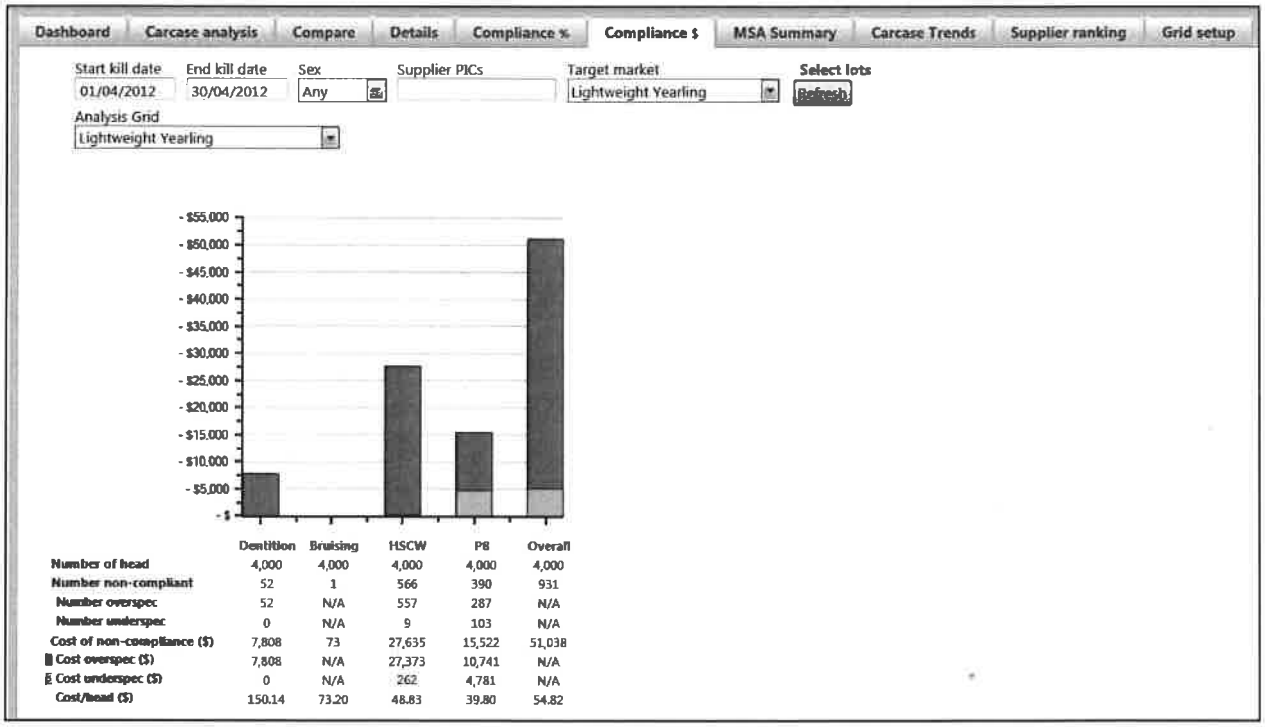

Benchmarking Comparisons

LDL reporting tools allow producers to benchmark the performance of their carcases on a regional, state or national level and through the use of comparative analysis reports, LDL also enables the performance of a herd to be compared over time to track compliance trends (see Figure 3).

Figure 3: Livestock Data Link Benchmark Report example.

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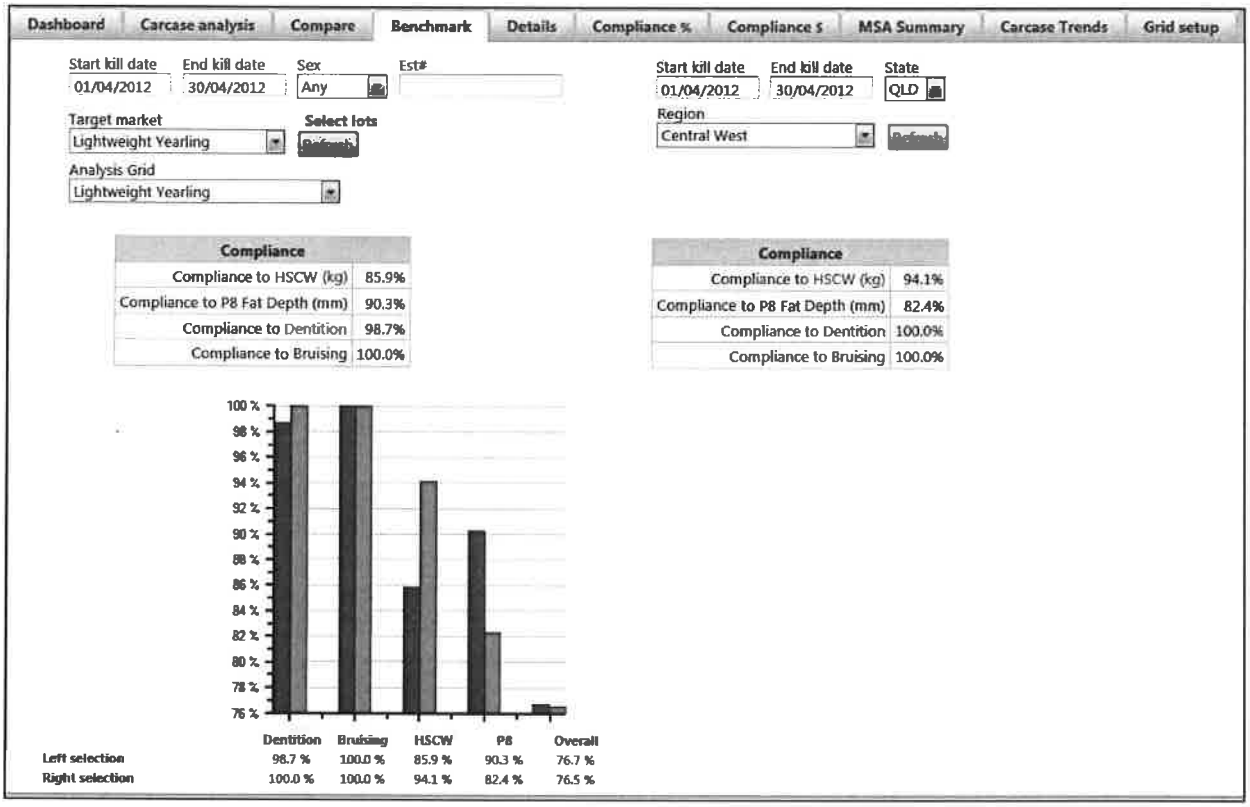

Supplier Performance

LDL's reporting tools provide processors and feedlots with the ability to compare and benchmark supplier performance, with suppliers ranked on their level of compliance for each trait (see Figure 4). Suppliers are those that supply cattle to feedlots of processors. As with producers being able to benchmark themselves at various levels, supplier performance can also be assessed at a shire, region, state or national level.

Figure 4: Livestock Data Link Supplier Compliance and Performance Report example.

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Dashboard | Carcase analysis | Compare | Details | Compliance % | Compliance $ | MSA Summary | Carcase Trends | Supplier ranking | Grid setup

Start kill date: 01/04/2012 | End kill date: 30/04/2012 | Sex: Any | Supplier PICs | Target market: Lightweight Yearling | Select lots: Refresh

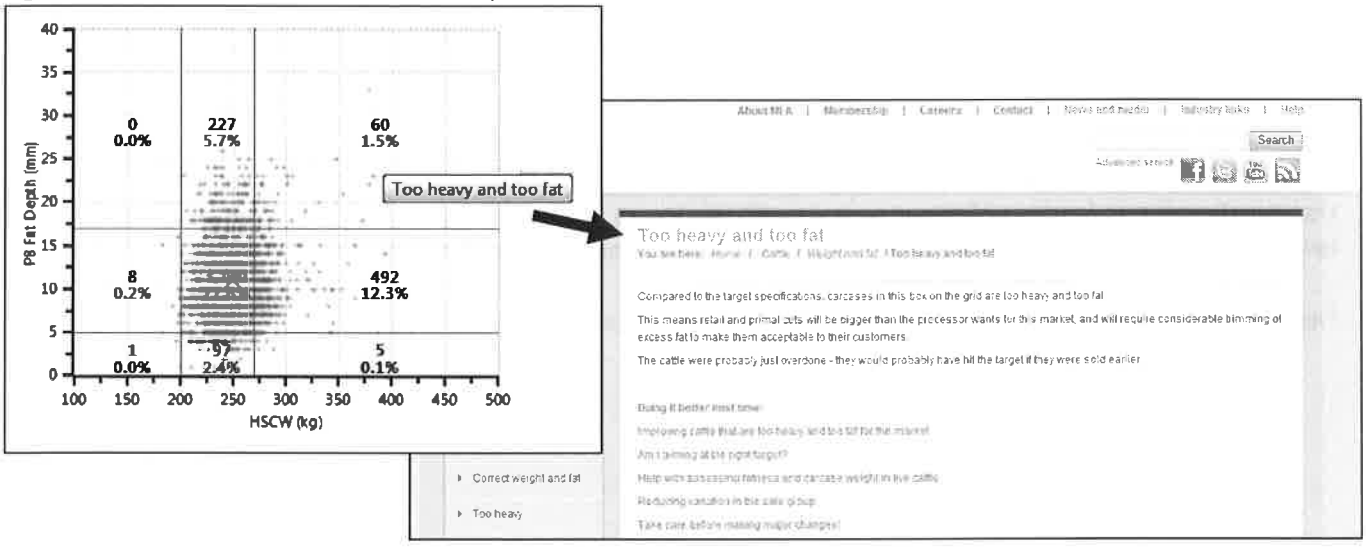
Analysis Grid: Lightweight Yearling

	Compliance % (Overall)	No. head	Property	Compliance (%) HSCW & P8	HSCW	P8	Dentition	Bruising	Location Shire	Region	State
1	78.5	1062	PICTEST1	80.0	84.6	94.6	98.2	100.0	Northern New England	New England	NSW
2	70.0	761	PICTEST2	71.1	81.2	88.0	98.6	100.0	Tamworth	Central North	NSW
3	74.2	712	PICTEST3	75.3	83.3	89.3	98.6	100.0	Northern New England	New England	NSW
4	79.5	575	PICTEST4	80.7	91.5	86.6	98.8	99.8	Northern New England	New England	NSW
5	80.6	890	PICTEST5	80.8	89.8	90.0	99.4	100.0	Armidale	New England	NSW
	76.6	4000		77.6	86.1	89.7	98.7	100.0			

Solutions to Feedback

As with all benchmarking analysis reports, what to do with performance information is just as important as reporting the performance results. An essential and strategic inclusion into LDL is the Solutions to Feedback library, where LDL's reports are linked directly to this library of solutions on how to address non-compliant issues on farm. Users can click on any of the segments within the carcase analysis grid and the Solutions to Feedback library provides a direct link to information about the highlighted area of non-compliance (see Figure 5).

Figure 5: Livestock Data Link Carcase Analysis Grid with associated Solutions to Feedback library linked output.



The information presented by the Solutions to Feedback library is user-friendly and relates to management practices that can be applied on-farm to improve compliance to targeted market specifications.

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Piloting and Evaluation

LDL is currently being piloted and evaluated with a small number of processor supply chains. The aim of these pilots is to:

- Enhance the processor's carcase data analysis capacity, and improve feedback and communication channels with suppliers. This in turn provides a basis for effectively improving supplier compliance to market specifications, with flow on commercial benefits to industry; and
- Provide the processor, and industry, with a business analysis tool to improve carcase data management.

The piloting phase includes an evaluation of the program by the processor plus in-field producer workshops to facilitate supplier understanding and utilisation of the available feedback.

After piloting LDL, a more extensive roll out to producers will be undertaken, with the producer extension currently under development.

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2. Why should producers adopt LDL?

What are the benefits to producers of adopting LDL?

- A centralised source of information on the quality aspects of red meat and livestock
- Identification of non-compliant carcases and the associated cost of non-compliance at an individual animal, mob or herd level
- Performance benchmarking within a herd, and at a regional, state or national level
- Carcase performance outcomes are linked to a library of solutions on how to address non-compliant issues on farm
- Enhanced capacity for monitoring and evaluation of carcase performance at a national level, with the ability to inform research, development and extension priorities for the industry

Producers will be able to-

- Access carcase feedback information from multiple processors on a single, secure website application
- See the performance of individual animals, as well as a consignment line
- Analyse and benchmark performance on regional, state and national levels
- Understand the actual cost of non-compliance
- Find solutions to address non-compliance via a resource library of tips, tools and factsheets

This is the "value proposition"!

What are the benefits to processors?

Processors will be able to-

- Customise grids to individual market specifications
- Streamline meaningful feedback from their customers to producers
- Achieve cost savings through increased product compliance
- Benchmark suppliers and monitor year-round performance.

What are the benefits to industry?

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3. Livestock Extension Lessons Learnt

- What new technology have beef producers adopted well in the past?
- What can be learned from extension programs for technology adoption in other industries?

Information from MLA on beef extension and technology adoption success stories.

Information from ADHIS on dairy technology/innovation success stories.

What can be learned from the above.

Key elements to be implemented in LDL extension.

Potential models of extensions to use.

Continuous Improvement & Innovation process (CI&I).

ADHIS Response

Would you consider these tools or projects success stories? / Extension Framework
According to DA market research (2013, n=400)
-81% of farmers using AI are fairly satisfied or very satisfied with ADHIS tools (tools = Good Bulls Guide, Selectabull, Displayabull, ABVs, APR)
-positive mentions: tools to select bulls, the ability to compare bulls/companies, independence, easy to use, confidence that it works
-negative mentions: trust in the data, too complicated, rely on semen seller, information difficult to source

Selectabull is a success story - but not because of the number of people Selectabull reaches. It's main success was in demonstrating that ADHIS was serious about being more responsive to the range of breeding objectives farmers utilise. In hindsight, it's usefulness was in repositioning the organisation.
Selectabull continues to be used by a small group of people (9% of survey participants said it influenced their semen selection decisions). It has evolved over time to become a bit more user friendly. We have removed the login function. While logins only took a couple of minutes, this was an unnecessary barrier to useage. Farmers that want to 'save' their details are asked to login after their selections have been made.
We haven't reported on Selectabull in quite a while. It's due for an update in line with the NBO review outcomes prior to April 2015.

Good Bulls Guide is a success story - it is 4 years old and is now used by 42% of farmers in making semen choices.
The Good Bulls Guide is our flagship product and all new tools/resources direct farmers back to the Guide (either print version that is posted to every farmer or excel version on the website). It has the strongest 'extension framework' behind it. I have attached the framework which is on page 4 of the attached document. The 'program on a page' is technically out of date but we are still working in the same direction. The Good Bulls Guide will also get an update before next April to reflect learnings from the NBO review.

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Genetic progress Report - this is our favourite product! I love the look on farmer faces when we are at the pub to deliver a presentation and I can hand them a 10 year breeding history of their herd. Engagement is immediate and the impact of our presentations is much higher than a standard presentation. We continually discover new ways to use this tool. It fits neatly with the Good Bulls Guide in that all genetic trend graphs on the GPR have specific table in Guide. When you put the two products together, they create a nice plan - act - measure - monitor - review process.
The hurdle with this tool is reaching farmers. Delivery through the herd test centres was a failure in all but 2 centres. Most centres wait for farmers to ring them to ask for a report but this doesn't often happen. We posted it to farmers following the April 2014 ABV release and we will likely to continue to do this on an annual basis. We heard a few squeaks from advisors that weren't that keen on report being seen on farm but they were in the minority. One of the major companies (ABS) has just launched a campaign that links their bull team to faster gains. We created a special brochure that they are using in their marketing.
The extension framework for the GPR is the same as the Guide - it's just one of the ingredients.

What would we do differently?
I think the logic behind the tools has been sound but the way we interact with groups is much different now compared to 2009 when Selectabull was launched. We spend a lot more time with other agencies (industry, commercial, govt) to help others find reasons to support the tools we produce. If our tool can help someone else achieve their KPI - we are in a winning situation. With a team of 3 people, we are consistently reaching 3000 people (in person) each year in addition to our media work. But to increase this number/frequency, we need to have other agencies on board. This creates its own complications to ensure the messages are consistent (but that's another story).

In the 2013 market research, 71% of farmers think that ADHIS is already doing a good job or couldn't make a recommendation for improvement. The highest recommendation was for greater ground presence (7% farmers). The NBO Review took this into account which is why it conducted Australia's Longest Farmwalk last March. It will likely have a sequel in March 15 as part of the roll out of new indexes (to be confirmed).

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4. What will be required for extension success (technology adoption) of LDL?

- What is the value proposition?
- What are the barriers to adoption?
- How can the barriers be overcome?

Regardless of delivery method and process, for extension to be successful, information presented must be relevant, applicable, credible and create value for the participants, which in this case are beef producers.

The value proposition for beef producers to adopt LDL is that the tool has the potential to reduce the number of non-compliant cattle carcases, which has been estimated to cost up to $280 per head (MLA 2012). With carcase non-compliance an issue for the Australian red meat sector, reducing the number of non-compliant carcases will increase income for producers and potentially increase profitability, which is currently relevant to beef producers. The LDL application is backed by research into the cost of non-compliance and working together with processors and producers across Australia to develop the tool, giving it credibility.

It is likely that producers interested in attending LDL extension activities want to improve their skill or knowledge base on carcase performance, as well as improve productivity, leading to improved profitability. However, there are barriers that can prevent people from attending extension activities or reduce their ability to learn and subsequently adopt new technology that need to be considered when developing extension framework.

Potential barriers currently identified-

- Time (length of activity)
- Cost (cost to attend training and/or cost in being away from the business)
- Location (including distance to travel to the activity)
- Technology use (access to computers, access to the internet, computer literacy, ability to use the NLIS database)
- Not wanting to change – happy with status quo or not wanting to know actual performance
- Farmer segment (eg. stage of business growth, wanting or not wanting to change)
- Accessibility to childcare

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Facilitating Change Processes On-Farm

In 2003, the Rural Industries Research & Development Corporation (RIRDC) conducted a significant review and summary of relevant recent and current research and development (R&D) on agricultural extension, learning and change. The paper was developed primarily through a review of publicly available literature published since 1997 on the topics of agricultural extension, facilitation of change processes and farmer learning. Of particular interest to investigating factors to consider in the extension of LDL were the summaries of understanding barriers to farmer participation in learning opportunities, as well as the facilitation of enhanced learning/change processes on farm.

Through their review, Fulton et al. (2003) summarised that farmers learn through a combination of mechanisms such as reading, field specialists, other farmers, the media, experience and observation, group activities, field days, seminars, conferences and organised training/education, with these mechanisms a summary of the work of Bamberry et al. (1997) and Kilpatrick et al. (1999a). Bamberry et al. (1997) and Kilpatrick (1996) found that farmers prefer non-organised, non-institutional learning, such as working with experts, other farmers, experience and the media, rather than organised training. A later paper from Kilpatrick et al. (1999a) also discussed the role of women in farm management learning, demonstrating that farm management learning is a function of learning from both the male and female members of the management team.

Fulton et al. (2003) discovered that there was significant research into the influence of the social context of farming on learning, with a main areas of research on the facilitation of enhanced learning on farm has been understanding how on farm change is influenced by the farmers' personal, family, business, industry and regional characteristics. Vanclay (1999) suggested that farming is a social activity with distinctive farming styles, advocating that the social context within which the farm management operates must be understood if extension is to be successful.

In relation to social context, Nettle (2011) found that farmer segmentation based on attitudes to farming was a useful tool for service delivery in the Australian dairy industry. Nettle (2011) believed that farmer attitudes and beliefs about farming have an effect on every aspect of thinking and doing, as well as decision making. Farmer segments were based on previous work by Dairy Australia (Mason and Phelps 2008; Waters et al. 2009) and were derived from a random survey of 450 farms. The segments represented the social diversity of the farming population with the mix of attitudinal variables including business orientation, aversion to risk, sustainable improvement, knowledge and self-reliance, intergenerational orientation, farming as a 'way of life', financial position and farming traditions. Waters et al. (2009) learnt this way of understanding the farming population proved to be more reliable for explaining changes on farm than other commonly used approaches to segmentation such as herd size, age or education.

The 2003 RIRDC study went on to summarise processes for facilitating learning/change with the main process being learning in a group. Both one-off and on-going group processes were considered, with both group types recommended to use participatory action learning/action research as the base delivery concept and one-off groups would require additional delivery information methods used to complement the one-off group process. On-going groups were recognised to have great potential for supporting learning and change, particularly those that develop the skills of indivduals and the group as a whole, plus build knowledge to assist group problem solving capacity.

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Understanding the barriers to farmers' participation in learning opportunities

Barriers to participation related to farmer characteristics

- Level of formal education (more likely to seek and participate in learning opportunities)
- Unsatisfactory experiences of past education and training activities
- Education and training not being a valued part of farming
- Dysfunctional family relationships
- Farmer perceptions that developing strategic thinking and business management skills are not relevant to their business goals
- Lack of recognition of previous (unaccredited) training
- Male specific: increasing age and distrust of the vested interest behind training delivered by private organisations
- Women specific: male domination of mixed-gender activities, lack of access to childcare, and traditional ideologies of women's roles in farm businesses.

Barriers to participation related to characteristics of individual and institutional providers

- Social distance between farmers and scientists and/or industry leaders, resulting in poor communication and lack of understanding
- Technical bias of research and extension organisations, failing to recognise that farming is also a social and cultural activity
- Perceived or actual lack of credibility of learning providers, leading to farmer disinterest

Barriers related to learning content

- Content needs to be perceived as relevant and applicable
- Avoid information "overload" to reduce giving mixed messages or lack of learning retention

Barriers related to accessibility of learning opportunities

- Publicity or promotion of the activity
- Length of time of activity
- Location (including amount of travel to reach location)
- Schedule of programs
- Availability of childcare
- Level of income

An international study by Kalim Quamar (1999) found that poverty was a major barrier to technology transfer and although Australia does not see the certain poverty of that seen in developing country, income levels between farmers in Australia would affect their opportunities for learning. Studies summarised by the 2003 RIRDC review (Murray-Prior and Hart 1998, cited in Kilpatrick et al. 1999a; Rose 1996) discovered that many training and education opportunities are mainly targeted or accessed by the top 10-20% of farmers, and Quinn (1999) and Grove (1999) found that low profits reduces participation by beef producers and level of income affects access to information technology. Much has changed in the information technology landscape from 1999 to the current year

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of 2014, where the technology is cheaper, faster, more powerful and more accessible. However, there are still barriers to accessing and using computers and the internet, particularly in rural areas, where the latest technology may not be compatible with existing infrastructure or internet access is limited or expensive.

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5. Recommended extension framework for LDL

Utilise ADOPT (Adoption and Diffusion Outcome Prediction Tool) developed by the CSIRO as a starting point.

Training service providers on the tool and using them to increase awareness of the tool and teach producers how to use it. Although this is ideal, if budgets do not allow, encourage service providers to attend producer workshops. Having service provider specific training is ideal as it allows them to learn without being "watched" by potential or actual clients.

Producer group workshops, short sessions (maybe half a day, 10am-3pm max) with smaller group size (no more than 20). Workshops must include actual use of LDL and producers must leave the workshop knowing how to login and use the tool.

Prior to attending the workshop, all registered participants should have their NLIS database login details sorted.

Workshops participants must be followed up after workshop.

Use existing farmer groups and networks for LDL extension (eg. existing farmer discussion groups, farmer-owned or driven organisations, MBfP network).

Targeting particular farmer segments, particularly in the initial extension roll out.

Create workshops that are readily accessible to women involved in farm management (family friendly).

Use processors to advocate LDL to producers.

Use credible deliverers and facilitators (and credible extension agencies if this is to be sub-contracted).

Integrate practical with technical delivery of LDL – include practical activities related to common non-compliance issues within the LDL extension activity (eg. assessing fat and muscle on live animal).

BEEF 4 PROFIT "Meating the Market" Workshops

30th October 2014 – Mt Gambier, SA
31st October 2014 – Mt Compass, SA

The South Australian Branch of Limousin Australia, through funding from MLA's More Beef from Pasture's Program, has organised two 1-day workshops focused on meeting market specifications and meat eating quality.

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The workshops have employed industry leading speakers from across Australia to present the following topics-

- Livestock Data Link – *Verity Gilbertson, MLA*
- Meat Standards Australia system and the new MSA Index – *Jake Phillips, MSA Trade Development Officer*
- Beef eating quality in SA and the potential to calculate meat yield – *Dr Stephen Lee, University of Adelaide*
- Tactics to increase beef eating quality – *Jake Phillips + Stephen Lee*
- PastureFed Cattle Assurance Scheme (PCAS) in SA – *Lisa Cotter, Cattle Council of Australia*
- Meating nutritional requirements (particularly in pasture fed systems) – *Hamish Dickson (Mt Compass) and Tom Thorne (Mt Gambier)*

The learning outcomes for the workshops are as follows:

- Increase understanding of market specifications and requirements, with an aim of higher levels of compliance.
- Build awareness on Livestock Data Link and knowledge on how to access and use LDL, with an aim of producers utilising the tool in the future.
- Increase understanding of Meat Standards Australia system and the MSA Index.
- Increase understanding of factors that affect meat eating quality, including regionally specific issues, with an aim to make changes on farm to increase meat eating quality.

Livestock Data Link is a significant component of the workshop content and although the "Meating the Market" workshops are not currently a part of the formal extension rollout of the LDL application, they will be an excellent opportunity to test extension theory while also receiving producer and service provider feedback on the tool and potential extension methods to deliver in the future.

Report and evaluation on Meating the Market workshops

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6. Recommended plan for extension delivery