Final report

Stanbroke Beef Digital value chain strategy development and Digital Officer

[Public Report]

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Executive summary

Background

Stanbroke is a vertically integrated beef production enterprise that as a part of this project reviewed and evaluated options to integrate their data capture and analytical capabilities to align with their data transfer needs. Stanbroke were looking to build expertise and resources to enhance digital capability, specifically through the provision of advanced analytics of datasets to gain new insights for the business. The purpose of the project was to develop digital capabilities to enhance productivity through the provision of advanced analytics of data sets to generate new insights across the business. The specific focus was on livestock production. The project analysed the value in linking existing and new company data with other data sets and mining the data to generate value and new opportunities.

The purpose of the project was to provide resourcing to develop and deliver data management and analytics solutions and build on current capabilities in data capture, management and analysts to allow Stanbroke to define the various processes, technologies and required metrics for optimal running of meat and livestock value chains at best practice levels. It was proposed that a Digital Officer be deployed to develop and implement Stanbroke's digital strategy. The Digital Officer was responsible for management and implementation of all digital initiatives undertaken over the initial three years. This will form one of several case studies required to demonstrate the digital strategies effectively adopted across beef and lamb production enterprises.

Objectives

The overall objective of this work was to develop a digital strategy and evaluate the feasibility and commercial options of data capture, management and analytics across the businesses. The primary goal was to provide support in the form a dedicated Digital Officer resource to deliver a data capture and analytics processes to allow the Australian Meat and Livestock Industry to define the various processes and required metrics for running farms, feedlots through to processing.

Methodology

The methodology consisted of recruitment, development of digital program and the implementation of the digital program, with ongoing review of company priorities. A Digital Officer was deployed to develop and implement Stanbroke's digital strategy. The Digital Officer was responsible for management and implementation of all digital initiatives undertaken over the initial three years including:

- Develop strategic portfolio of digital opportunities
- Data analysis and insight generation process
- Track and report on quantifiable benefits of digital projects.
- Participate in internal and external networks to accelerate outcomes.
- Action steering committee tasks

Results/key findings

The key findings included, a clear and documented development stage gave benefits and clarity to all stakeholders, detailed and accurate audit/map of current digital procedures and technology stack, on-site peer-to-peer contact was significantly more beneficial than any other form of contact, staff professional development was key to engagement and realised productivity gains and interactions between external industry participants created invaluable connections to collectively work toward a

common goal. Multiple industry benefits were witnessed, such as keeping people attached to the industry, increasing grid performance both internally and externally, increased ability to manage land systems more effectively and breaking down barriers to sharing data for mutual benefit. It is recommended that these roles proceed across a broad range of industry companies with the ability for existing participants to re-engage with the program with a more focussed vision. One of the major drawbacks of the program was the short timeframes and physical limitations of how much could be achieved with given resources.

The program was considered successful by providing a catalyst to fast-track digital innovation capability within Stanbroke, namely:

- Developing skills and capabilities in data and digital capacity [Key learning #1]
- Recruitment and lines of reporting to enhance practice change [Key learning #2]
- Networks delivering benefits by accelerating uptake of new methods [Key learning #3]
- Building trust in company's data to make decision [Key learning #4]
- Developing a data culture [Key learning #5]

Benefits to industry

The Digital Strategy role demonstrated supporting the delivery of impact for industry in this focus area by assisting to increase the efficiency with which data is collected, integrated, analysed and presented for use to decision makers across the supply chain. The co-funded role has contributed toward achievement of a range of key outputs (products) and their value propositions, including:

- Economic benefits
- Environmental/sustainability benefits
- Socialised benefits

Dashboards are currently being used by the business daily to make decisions.

Future research and recommendations

The next phase will focus on making improvements to data cleaning and refining the data collection process along with the introduction of new management reporting and software trials. Stanbroke's medium to long term goals are to continue to develop capabilities in digital and data integration across the business. This may be part of the soon to be commenced Value Based Marketing (VBM) collaborative project with MLA.

Limitations of this role is that due to the fact the role was trailed as a pilot and developing over time. Also, the lack of structure the initial stages of development over emphasised on what could be achieved within the timeframe of the project. Goals must be realistic and achievable with the allocated resources.

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1. Project background, scope and purpose

1.1 Background

Stanbroke is a vertically integrated beef production enterprise that as a part of this project reviewed and evaluated options to integrate their data capture and analytical capabilities to align with their data transfer needs. The purpose of the project was to provide resourcing to develop and deliver data management and analytics solutions and build on current capabilities in data capture, management, and analysis to allow Stanbroke to define the various processes, technologies and required metrics for optimal running of meat and livestock value chains at best practice levels. It was proposed that a Digital Officer be deployed to develop and implement Stanbroke's digital strategy. The Digital Officer was responsible for management and implementation of all digital initiatives undertaken over the initial three years. The outcome forms one of several case studies across similar roles at other companies, required to demonstrate the digital strategies effectively adopted across beef and lamb production enterprises.

Collectively the red meat industry is investing hundreds of millions of dollars in technology and systems that will generate more and more data for use by supply chain participants. The assumption in these investments is that the data generated will be able to be used by producers to improve their performance (and profitability) and to ultimately improve the optimisation of the supply chain. The challenge of presenting complex information in a simple and actionable way is significant and this project is exactly the type of strategy that is required for supply chains to be successful in the longer term.

Stanbroke is constantly looking to build expertise and resources to enhance digital capability, specifically through the provision of advanced analytics of datasets to gain new insights for the business with a specific focus on livestock in this project. The project analysed the value in linking existing and new company data with other data sets and mining the data to generate value and new opportunities. This project has informed the digital strategy for the Stanbroke supply chain. It will provide an invaluable case study where the process, tools and material developed would become available for use in the wider industry.

1.2 Digital Officer - Roles & responsibilities

The primary focus of the Digital Officer role was the implementation of the agreed Stanbroke/MLA Digital Strategy across the Stanbroke business. The Digital Officer focused particularly on managing the Stanbroke digital priorities and also co-ordinating the livestock production focus areas of the Digital Strategy.

The major activities undertaken by the full-time Digital Officer included:

- Facilitate the development of a comprehensive Stanbroke Digital Strategy across the key business areas.
- Assist in developing and monitoring key performance indicators and other measures of impact as agreed.
- Manage innovation idea generation and filtering and feedback processes with a specific focus on data capture, management and analytics.
- Develop and co-ordinate an agreed suite of R&D/innovation projects related to the digital strategy and priorities.

- Manage and monitor the Stanbroke innovation portfolio to manage expenditure and track benefits from outcomes generated from Stanbroke R&D/innovation projects and activities.
- Participate in the development and implementation of Stanbroke's innovation skills and resources plan.
- Prepare regular project reports and quarterly innovation reports.

1.3 Purpose and description

The purpose of the project was to develop and implement Stanbroke's digital strategy across the business with a specific focus on livestock production, procurement and movements. This was to be managed through the provision of new data capture and storage methods and advanced data analytics to generate new insights for the business.

The purpose of the project is to provide resourcing to develop and deliver data management and analytics solutions and build on current capabilities in data capture, management, and analytics to allow Stanbroke to define the various processes, technologies and required metrics for optimal running of meat and livestock value chains at best practice levels. It is proposed that a Digital Officer be deployed to develop and implement Stanbroke's digital strategy. The Digital Officer was responsible for management and implementation of all digital initiatives undertaken over the initial three years. This project forms one of several case studies required to demonstrate the digital strategies effectively adopted across beef and lamb production enterprises.

The primary activities were:

- Enhance existing livestock management reports to provide feedback to properties and management.
- Evaluate feasibility of collecting data and reporting on other issues that could affect yield and grading outcomes such as nutrition, animal handling and animal health.
- Data collection at Backgrounding, Feedlot and Processing Plant is very mature although the feasibility of extensive on-farm data collection presents unique challenges which need to be overcome.
- Review current on farm managements systems and how they can evolve to use feedback from processors.
- Streamlining of different data sources for ease of manual integration, although further work has commenced on automation of this combination.
- Individual animal management using various data management tools to capture and collect data to improve animal performance.

2. Objectives

The overall objective of this work was to develop a digital strategy and evaluate the feasibility and commercial options of data capture, management, and analytics across the businesses. The primary goal was to provide support in the form a dedicated Digital Officer resource to deliver a data capture and analytics process to allow the Australian Meat and Livestock Industry to define the various processes and required metrics for running farms, feedlots through to processing.

Specific objectives of the project in providing a dedicated Digital Officer role include (but not exclusive):

- Detailed data capture and management mapping exercise of Stanbroke using existing evaluation tools developed by various providers.
- Identify gaps in existing capabilities and capacities in data capture and management.
- Design and develop a cloud based (accessible) system that accommodates diverse data sources and formats.
- Evaluate pre-existing systems although more work to be completed for this solution to reach maturity
- Evaluation of greater insights into market demand and supply, pricing trends, consumer trends.
- Advise on a series of identified new data sensing devices and analytics to fill current on-farm data sensing gaps.
- Review current individual datasets
- Evaluation of the outcomes of the on-farm/feedlot/processor data management system and extrapolation across and integrated value chain where applicable.
- Review of the feasibility, cost benefit and business case associated with adoption of integrated data management system for adoption on-farm and across the entire value chain.

2.1 Milestone 1 - Contract execution

Finalise position description, commence recruitment. Form Company / MLA steering committee and set overarching goals, metrics, and outline.

Progress report submitted to MLA for review and approval

2.2 Milestone 2 - Appoint suitable candidate

Develop framework for development and implementation of red meat digital strategies. Define preliminary list of target digital applications. Consider data availability, metrics and resource planning for digital portfolio.
Progress report including digital strategy and priorities. Complete 1st Steering committee meeting and submit report to MLA of key outcomes for review and approval.

2.3 Milestone 3 Digital program development and implementation

Digital program development and implementation involved delivering key functions such as:

- Develop strategic portfolio of digital opportunities
- Data analysis and insight generation process
- Track and report on quantifiable benefits of digital projects.
- Participate in internal and external networks to accelerate outcomes.
- Action steering committee tasks

Submit Quarterly Report to MLA for review and approval, which should include details of data analysis, development of new digital and data approaches, analytical tools, application of business decision tools, skills development, and participation in digital networks.

GO/NO GO DECISION. Progress to demonstrate use of digital insights in innovation portfolio; suite of activities commenced that demonstrate future increased red meat demand for Stanbroke's operations and customer channels. Report to be submitted to Stanbroke's / MLA Steering committee (Due 12 April 2019).

2.4 Milestone 4-5 Digital program development and implementation

Submit Quarterly Report to MLA for review and approval, which should include details of data analysis, development of new digital and data approaches, analytical tools, application of business decision tools, skills development, and participation in digital networks.

GO/NO GO DECISION. Progress to demonstrate use of digital insights in innovation portfolio; suite of activities commenced that demonstrate future increased red meat demand for Stanbroke's operations and customer channels. Report to be submitted to Stanbroke's / MLA Steering committee. (Due 23 September 2019).

2.5 Milestone 6-8 Digital program development and implementation

Submit Quarterly Report to MLA for review and approval, which should include details of data analysis, development of new digital and data approaches, analytical tools, application of business decision tools, skills development, and participation in digital networks.

GO/NO GO DECISION. Progress to demonstrate use of digital insights in innovation portfolio; suite of activities commenced that demonstrate future increased red meat demand for Stanbroke's operations and customer channels. Report to be submitted to Stanbroke's / MLA Steering committee (Due 20 July 2020).

2.6 Milestone 9-10 Digital program development and implementation

Submit Quarterly Report to MLA for review and approval, which should include details of data analysis, development of new digital and data approaches, analytical tools, application of business decision tools, skills development, and participation in digital networks.

2.7 Milestone 11 Digital program development and implementation

Digital program development and implementation deliver key functions such as:

- Details of Study Tours
- Develop new digital and data approaches.
- Data analysis and insight generation process.
- Display the analytical tools in use.
- Application of business decision tools
- Skills development
- Participate in internal and external networks to accelerate outcomes

2.8 Milestone 12 Digital program development and implementation

Digital program development and implementation deliver key functions such as:

- Details of Study Tours
- Develop new digital and data approaches.
- Data analysis and insight generation process.
- Display the analytical tools in use.
- Application of business decision tools
- Skills development
- Participate in internal and external networks to accelerate outcomes.
- Stanbroke and MLA Steering committee held to discuss project outcomes, impacts and next steps

2.9 Milestone 13 Digital program development and implementation

Develop a final report on the cumulation of all the findings and learnings of the entire project. A public final report will be developed that will be approved by MLA & Stanbroke for industry release. Lessons learnt on innovation approaches used to identify digital high growth opportunities and successes, failures, surprises to be presented. Stanbroke to deliver one industry workshop and update to Stanbroke & MLA senior management.

3. Methodology

3.1 Recruitment & assignment of digital officer role [Milestones 1 & 2]

Once the project objectives and outcomes were established, a detailed position description was created, and a steering group was formed to facilitate the recruitment process.

The primary focus of the Digital Officer role was the implementation of the agreed Stanbroke/MLA Digital Strategy across the Stanbroke business. It was anticipated that this Digital Officer will focus particularly on managing on the Stanbroke digital priorities and will also co-ordinate the livestock production focus areas of the Digital Strategy.

The major activities to be undertaken by the full-time Digital Officer include:

- Facilitate the development of a comprehensive Stanbroke Digital Strategy across the key business areas
- Assist in developing and monitoring key performance indicators and other measures of impact as agreed
- Manage innovation idea generation and filtering and feedback processes with a specific focus on data capture, management, and analytics
- Develop and co-ordinate an agreed suite of R&D/innovation projects related to the digital strategy and priorities
- Manage and monitor the Stanbroke innovation portfolio to manage expenditure and track benefits from outcomes generated from Stanbroke R&D/innovation projects and activities
- Participate in the development and implementation of Stanbroke's innovation skills and resources plan
- Prepare regular project reports and quarterly innovation reports

It was decided by the steering group that a suitable candidate would be hired internally which reduced the time taken to become familiar with the management and procedures required to excel in this position.

3.2 Digital program development & Implementation [Milestones 3-12]

The early stages of this project required many in-person and phone discussions internally and with the steering group, the main outcome being the development of red meat digital strategies. Brainstorm sessions were utilised to define preliminary lists of target digital applications. There was also a focus of the mapping the existing data availability, metrics, and resource planning for the digital portfolio.

The key functions that were undertaken in this development stage of the project included:

- The development of a strategic portfolio of digital opportunities
- Data analysis and insight generation processes
- Tracking and reporting on quantifiable benefits of digital projects
- Participating in internal and external networks to accelerate outcomes

A key part of this process was the quarterly milestone reports that were submitted to MLA and included details on the success of the above functions. Throughout the project there were also three Go, No Go points scheduled which gave the steering committee a chance to come together and review the progress demonstrated in the milestone reports. Further digital development occurred in these discussions, with a focus on proposed activities that could demonstrate increased red meat demand for operational and customer channels.

The importance of clear and focussed goals was documented in the steering committee meetings and multiple key documents were produced to allow for a visual display of current and planned achievements. These documents include:

- 5 Year Vision/Plan with 6 key goals
    - Supply Chain feedback loop: Breeding fit for market animals
    - Data and Objective Measures Strategy & Priorities
    - Animal nutrition: getting animals to specifications at the highest profit margin
    - Individual animal management: early identification of markets
    - Individual paddock management: managing the supply chain assets
    - Connectivity: The platform to build supply chain insights
- Timeline graphic displaying the Data and Objective Measures Strategy & Priorities (5 years)
- Data and Digital Strategy on a Page which included an aspiration, and 5 key pillars with four (4) focus areas in each that identified possible delivery pathways
    - Version 1
        - Processing & Products
        - Livestock and Properties
        - Feedlot
        - People and Systems
        - Business Measures
    - Version 2
        - Analytics for Decisions (overarching pillar)
            - Properties
            - Feedlot
            - Processing
            - Customer and Markets
- Learning and Development plan for the appointed Digital Officer

- A Roadmap of all other related projects currently being undertaken within the company (both through MLA and internally)

Throughout the three-year project each of the below tasks were undertaken and reported on in each milestone report.

- Details of data analysis
    - The digital officer role had access to all data sets throughout the integrated supply chain, this allowed for data linkages (manually initially) to create new data insights that were not achievable within a department.
- Development of new digital and data approaches
    - A key issue that was identified is the different levels of data maturity and granularity along the supply chain. This was identified due to the data mapping exercise in the development stage and allowed the company to identify areas of improvement. One area was the data capture accuracy and effectiveness prior to the feedlot/processing plant.
- Use of analytical tools
    - A few examples of the tools that were utilised are: excel, power BI, power query, power pivot, R studios and built-in tools to 3rd party software providers.
- Application of business decision tools
    - Utilised the above analytical tools to provide actionable insights for department/property managers as well as the people working the animals on the ground. The key to effective up-take of any new business decision tools was the digital officer travelling to the managers location and working through the changes personally (importantly showing how and why these changes could assist them)
- Skills development
    - The digital officer undertook multiple professional development activities throughout the project.
    - More importantly the digital officer facilitated skills development for new and existing staff that were required to utilise the new data related business processes.
- Participation in digital networks
    - Part of the supply chain and digital officer program MLA/ISC hosted multiple opportunities for the network to meet (in-person or virtually) to discuss the latest outcomes in each respective project and hear about key industry trends or changes.
    - On top of the above scheduled meeting the digital officer actively attended field days, conferences, and webinars to expand the network and gain further knowledge to assist with the implementation of the digital strategy
- Steering Committee meetings
    - A critical part of the success of this project was the ability for key stakeholders from both MLA and the company to review, realign and discuss the outcomes of the project. It allowed a direct line of communication to a greater pool of experience than could be accessed within a company, which greatly accelerated both new idea synthesis and actioning learning from other projects or case studies.
- Enabling digital and data capabilities

    - In the early stages of the development, it was identified that a key hurdle to company-wide improvement from a digital strategy was the limited connectivity options across a large section of the supply chain. As part of a separate project, an external cost benefit analysis was undertaken which demonstrated significant benefits to digital capability can be caused by enabling connectivity along the supply chain.
- Discovery of new digital and data capabilities
    - Part of the implementation stage was an ongoing development of digital opportunities
    - This discovery was assisted by the skills development and digital network activities which exposed the digital officer and other employees to new products and procedures.

After the successful recruitment and digital development tasks that were undertaken in the initial stage of the project (milestone 1-3), the appointed Digital officer announced that they were moving away from the business (for personal reasons). Due to the significant progress demonstrated and clear documentation provided, it allowed for another internal appointment to the digital officer role with limited downtime. The early identification of this change allowed for an extended handover period which allowed for the implementation stage to continue to the forecasted schedule.

4. Results and findings

4.1 Digital program development & implementation

4.1.1 Stanbroke's digital strategy and priorities (Five-Year Vision)

Stanbroke's digital vision was to "Enhance productivity though enhancing digital capability, specifically through the provision of advanced analytics of data sets to generate new insights for the business. Stanbroke is a beef solutions business, and the supply chain starts at conception of animals on our northern properties and finishes with customers all over the world." Refer to Appendix, Section 7.1.

Stanbroke's Agribusiness improvement goals of the five-year vision was to create a graphic timeline to display the companies' priorities. Figure 1 below shows this as determined at the beginning of the project. At the completion of the project, it was found that Figure 1, may have been overly ambitious and overlooked the complexities of achieving each of the goals listed in a relatively short timeframe. Although each section shown in Figure 1 has seen accelerated improvements (due to the digital officer) over the course of the project, each area is consistently evolving, and it is proposed that more work is completed to extract the maximum value from the supply chain.

The ongoing review of the digital strategy was fundamental to the success of the project, Figure 2 shows the second iteration of the companies' One-Pager strategy. This strategy has the overarching pillar of "Analytics for Decisions" which each preceding pillar feeding into this. This document allowed all sections of the business to have a clear understanding of their shared goals and the combined benefits through utilising data for decisions.

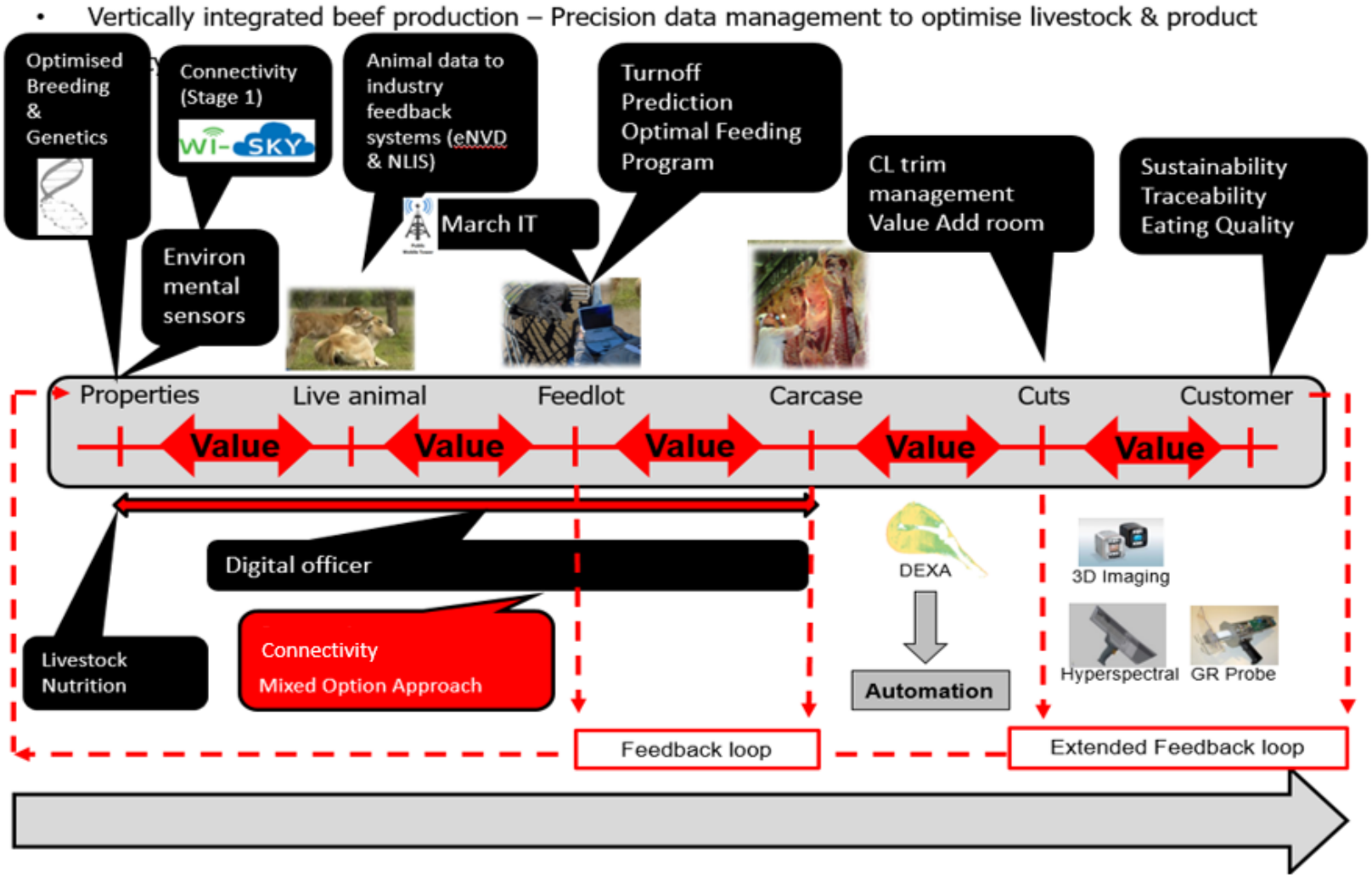

Figure 1: Data and Objective Measures Strategy and Priorities

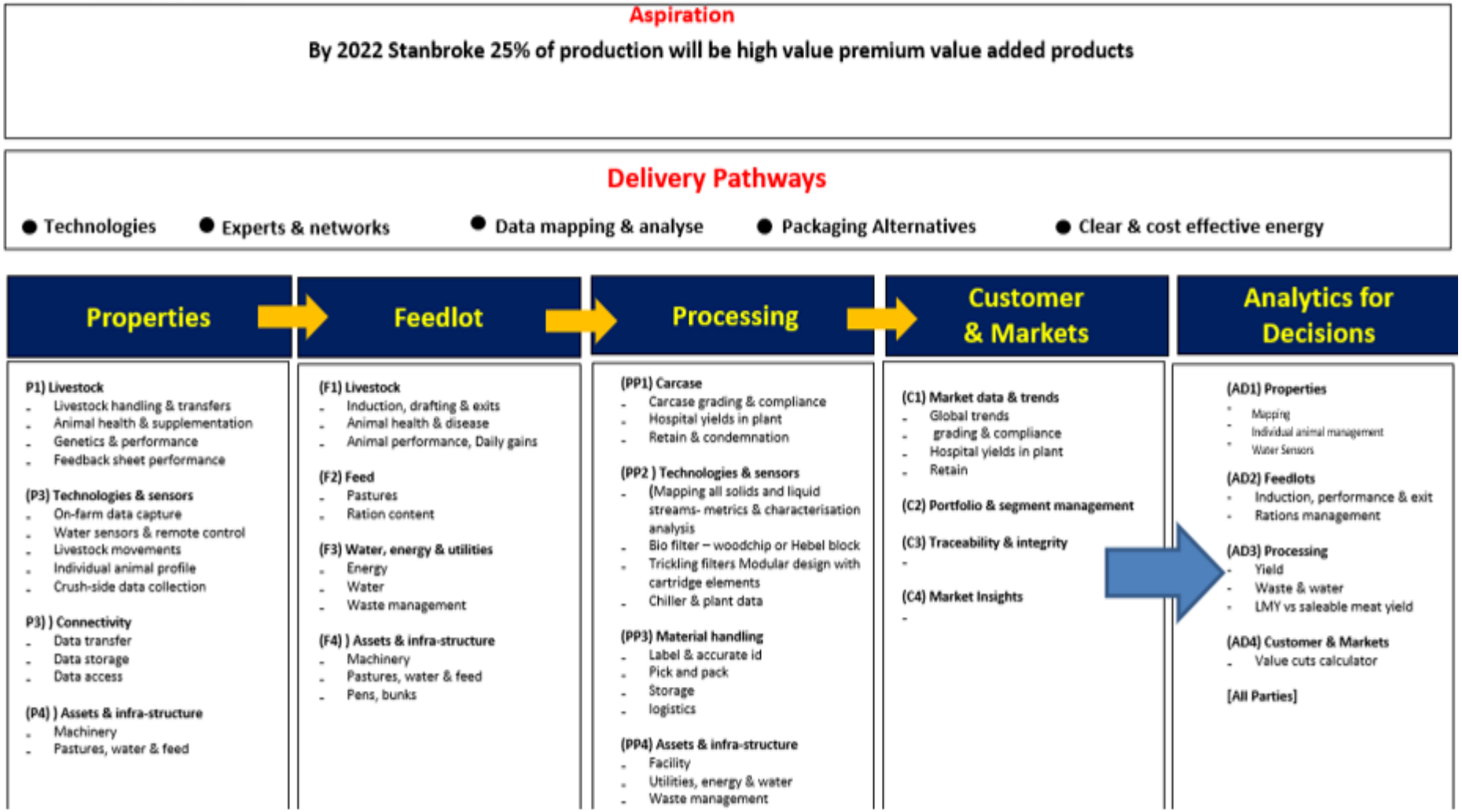

Figure 2: Data and Digital Strategy and Priorities

4.1.2 Details of Data Analysis

Existing data analysis methods and procedures have continued to be utilised, the aim of this project was not only to find new methods, but to enhance/streamline existing processes. The digital officer assisted in the development of improved accuracy in data collection on farm to strengthen existing data analysis methods. This was achieved by regularly attending properties and working hands-on with the staff, both to gain their respect (so that requests would be followed through) and to build processes from the ground up. Part of the travel involved one on one discussion with property managers to continue upskilling regarding data interpretation and what information they are looking for and have the ability to utilise. The ability to make oneself available any time of day for a phone call fostered increased inquisitive employees which asked the digital officer new questions to find answers for in the existing data sets. Examples of data analysis that came from the discussions include the use of collated production data to model future quality and quantity of product and the use of the collected rainfall data combined with industry datasets to recommend turn off dates for the following year.

4.1.3 Development of new digital and data approaches

The analysis is only effective when the data source is reliable. The creation of newly designed and formatted recording documents for managers to track paddock and property head numbers was achieved to streamline data collection processes. The digital officer was able to reduce double handing of data by developing a semi-automatic Stock Movement Advice which is generated from the Individual Management system but allows the Manager to review and confirm specific details (to further avoid collection errors). To further enable reduced double handling research was conducted on the possibility of changing to Electronic NVD's although data connectivity at the yards currently does not allow the truck driver to complete their part of the form. Even without the constraint of connectivity, predicted hurdles will be related to the general knowledge/confidence on using a computer/tablet rather than the electronic form itself. Trialled two 3rd party applications that integrate with the eNVD platform but found that they were still in early stages and hard for the current livestock managers and in particular the transport drivers to operate.

To further improve data collection, aligning with the five-year vision of individual paddock management the digital officer introduced electronic tablets for supplementation trucks and bore runners to record important details such as supplement per paddock via a cloud base system that managers have access to once the operator synchronises the device at the end of the day. The supplement template required a few iterations based on user feedback and has been updated to be more user friendly and can now be linked to future paddock numbers to automatically calculate consumption rates across a mob. Similar tablets were also trialled for weekly toolbox meetings and logbooks for transport drivers although this solution proved unsuccessful due to the technical knowledge of the drivers and lack of desire to learn. A manual logbook was utilised in a format that was easily entered into an electronic format. Although historic machinery movements were still manual, a cloud-based machinery booking register was initiated so that each piece of equipment can be allocated to the correct station and recorded against a specific project. Following this, a trial GPS vehicle and lone worker satellite tracking systems was conducted. This project initially started with vehicle safety units being ordered and installed. The devices can detect crashes, rollovers, harsh driving and other driver behaviour and report urgent alerts via satellite. The immediate benefit of this solution was increased employee safety specifically for lone workers. Other benefits that are predicted will include an electronic asset register, tracking of vehicle hours to assist with scheduled servicing and an ability to make decisions on the efficient use of certain vehicle types.

Part of the role of the digital officer was to facilitate other MLA projects during their tenure. An example of the was the evaluation of on farm remote sensing devices (P.PSH.1143), this project looked at the benefits of two types of remote sensing technology which proved very successful over the trial period. While the initial number of devices was small, due to the increasing number and coverage of the sensing network larger benefits are now being witnessed. The digital officer has continued discussions with the provider about the potential future applications of the hardware and more importantly software that they provide. The data collected has the potential to include predictive water consumption based on the number of animals at a water point, safety check in location and pump switches. Another benefit is the water monitoring network has grown to a size that now allows paddock/region specific rainfall capture (historically the rain fall is recorded at the homestead which may be 100's km from the specific paddock. A rainfall recording spreadsheet was also created to replace paper-based rain calendars. This spreadsheet compares the rainfall across multiple gauges and sensors across a property as well as to historical station specific BOM data. This gives the managers an indication of current year performance compared to previous min, max, median, and average years. Also using the BOM data the digital officer was able to create a rating system of each season for up to 100 years. Once this is refined this will be used to report financials against similar seasons of the past.

Engaged with an Individual Animal Management software provider to investigate creating a link between individual and mob-based systems. This is predicted to become a very powerful tool that aims include multiple data sources shown on an interactive map to aid in property management. Data sources initially to include paddock, mob and animal level information currently collected, to hopefully be extended to include the Supplementation and Water run information combined with satellite pasture quantity/quality to give indications on individual paddock performance. Ideally this platform would also be able to pull in data from 3rd party sources such as the water monitors etc. The company is provider agnostic and engaged as many competitor offerings as possible to test as replacements of the current paper/excel based manual system. Many providers were tested including Sapien, Agriweb, Ag360, Maia Grazing, Kool Note, Mobble, Stockmate, and others, although due to the complexities of a fully integrated supply chain no one offering in their current state could provide the required capabilities. Each system has positives and negatives, but none were able to provide the same level of flexibility and ease of use as the existing procedure to create an easy-to-use system with logic built in to suit a large pastoral operation feeding into an integrated supply chain.

The digital officer decided to continue making small improvements to their existing procedures while slowly shifting the storage of this information to an internal cloud-based storage point. If in the future the above/new options release new updates to their offerings there is potential to revisit the benefits of a new software rollout.

Throughout the project the company has utilised a new feature within the current individual animal management software to provide a greater level of consistency across the stations. The profile tool allows an administrator to make changes and updates to the setup of the program which then flows through to each device once reconnected to the internet. Benefits of this tool were seen immediately with reduction of data entry errors due to invalid field restrictions. This has greatly strengthened the integrity of the data collection process as all collected fields can now be controlled from a central location and will remain consistent regardless of the location and user of the software. Part of the Profile tool allows the head office to create advance drafting rules that can be access by all station members. Previously animals could only be 'automatically' allocated to a draft direction based on live weight. This should allow staff to 'automatically' allocate a drafting direction across any recorded piece of information such as Calving Group, Pregnancy Status, Treatments, Breed, Age, DNA result etc. Also, a significant Data Cleaning function was deployed, using a new feature made available by

the current individual management system provider which resulted in over 300,000 pieces on animal data being conformed to a consistent format.

Data Cleaning was also presented to managers on a monthly basis to incentivise different properties to compete to reduce errors as can be seen in Figure 3. This has again increased the Data integrity and allows for more accurate reporting. In Milestone 8 - 10 the digital officer was able to simplify the individual animal identification process by ordering electronic NLIS ear tags trayed and automatically matched with a custom visual ear tag. This has reduced the human error that was observed previously when both tags had to be matched and manually allocated in the animal management software. In doing so increasing the data confidence of each yarding session. It has also reduced the time taken when processing animals through the yards as the data entry time has been simplified. This has had positive effects on both the animals and staff. This procedure was expanded on for the 2021 tag order by also automatically linking the genetic tissue samples (TSU) of specific animals directly to their NLIS and Visual Management tag. These tags and TSU samples have started to be used and have had time savings of a few seconds per animal by reducing the time matching up tags, typing in details and fiddling with Tag backs. Engaged with the current individual management provider to improve the Live scanning screen and reporting display of the crush side data so that instant decisions can be made without relying on the need for the computer to return to the homestead and be manipulated in any way.

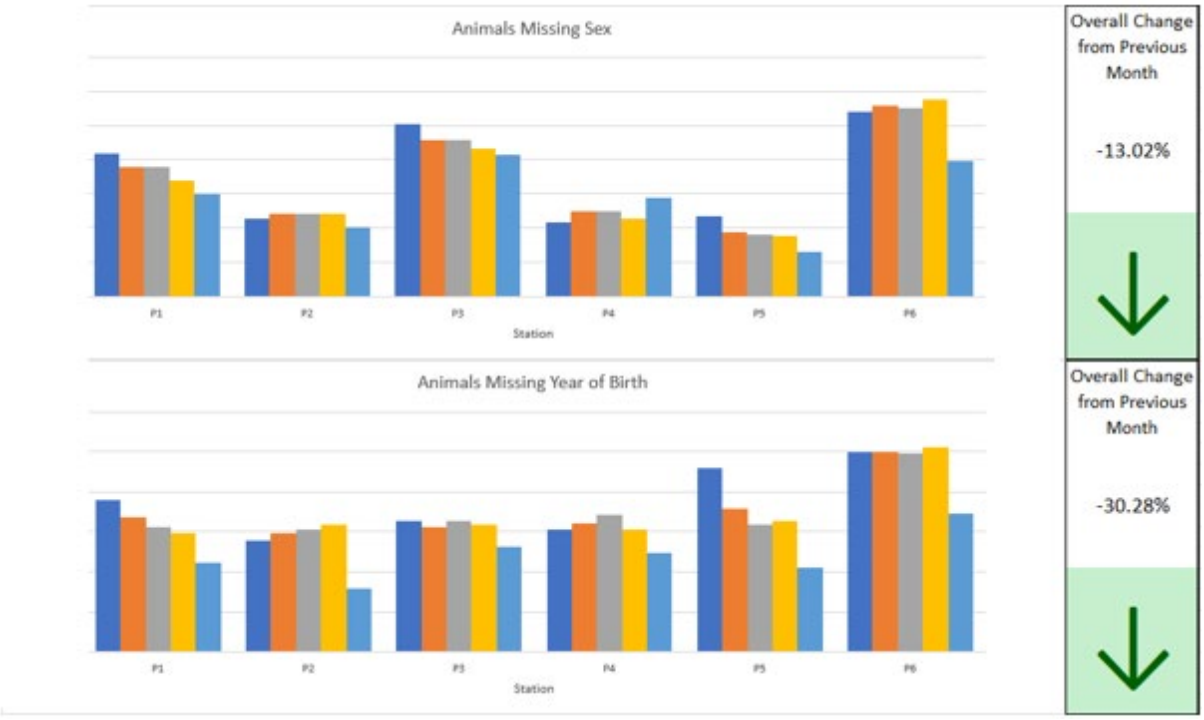

Figure 3: Data Accuracy report to incentivise Data capture improvements

Conducted a meeting with Moovement and Ceres Tag to discuss the opportunities that are presented with GPS tracking of animals through ear tags. One hurdle that is foreseen is the upfront cost of network setup (currently a LoRa tower every 8-10 Km or satellite per tag). Short term applications may be used to track Stud Bulls and other high value animals. The digital officer contributed to discussions with Moovement regarding the difference between industry and producer benefit in relation to lifetime traceability. Part of this discussion prompted the inspection of what data/information would be required to display the property or post code of origin to a retail

customer. Due to the varying levels of information granularity and ownership, each piece of meat has potential to give the consumer a different experience depending on how much available information can be provided. At this stage it is recommended that companies focus on their branding and provenance and providing their customers validation through other methods than specific individual animal traceability to the retail consumer. Without entire industry collaboration the fragmented data sets (amplified for non-integrated businesses) would provide an inconsistent experience to every consumer. A small trial of GPS tags was conducted although little commercial benefit was found (although with a small sample size).

Through connections made in other projects, discussions have also prompted other ideas and concepts for future projects which have potential to benefit whole of supply chain. The idea of value-based marketing and "whole of chain" data integration is being explored to bring together data for decisions across many parts of the supply chain. The concept would test and validate the value that can be achieved for extensive livestock production enterprise through the integration of:

- Objective measurement of on-farm digital technologies (IoT)
- External Databases (processor owned systems)
- MLA and ISC's LDL to support enhanced decision making and to facilitate the collaboration towards value-based marketing
- Connectivity – Generating the right data for supply chain information
- People and Capability for Decisions – Re-imagining the supply chain for value-based marketing
- Market and alignment for value increase – optimizing production systems for consumer value.

Other activities that were conducted based on the development of new digital and data approaches are listed below:

- Participated in a meeting with DAF and FarmDoctors to discuss the usability of the "Cownter" program to detect animals from aerial/satellite footage.
- Looked at using buffalo fly repellent ear tags to increase heifer conception rates and ADG in the north. It was decided to focus on getting puberty weights achieved first.
- Helped organise the rollout and testing of an online induction system for new and existing staff which can be completed before travelling north and where additional training and professional development can be added and stored locally.
- Conducted preliminary discussions with CiboLabs to trial their satellite forage mapping program and to link to livestock inventory system. This will help give managers an understanding of available feed and stocking rates. Looking at either getting Pairtree or similar to bring together the CiboLabs' data onto a dashboard with other information or doing this internally.

4.1.4 Use of Analytical Tools

The use of analytical tools has been critical to the success of this project, examples are listed below.

Use of simple but effective Pivot Charts (one example) linked to feedback sheets that allow the station managers to easily view meatworks and feedlot performance over time as can be seen in Figure 4. This reduces the skill/time required to interpret a feedback sheet which are often different formats from each meatworks. It allows the relevant staff member to quickly identify their current and historical performance and combined with knowledge of management and seasonal conditions can begin to understand the impacts to carcass weight of their cull cows.

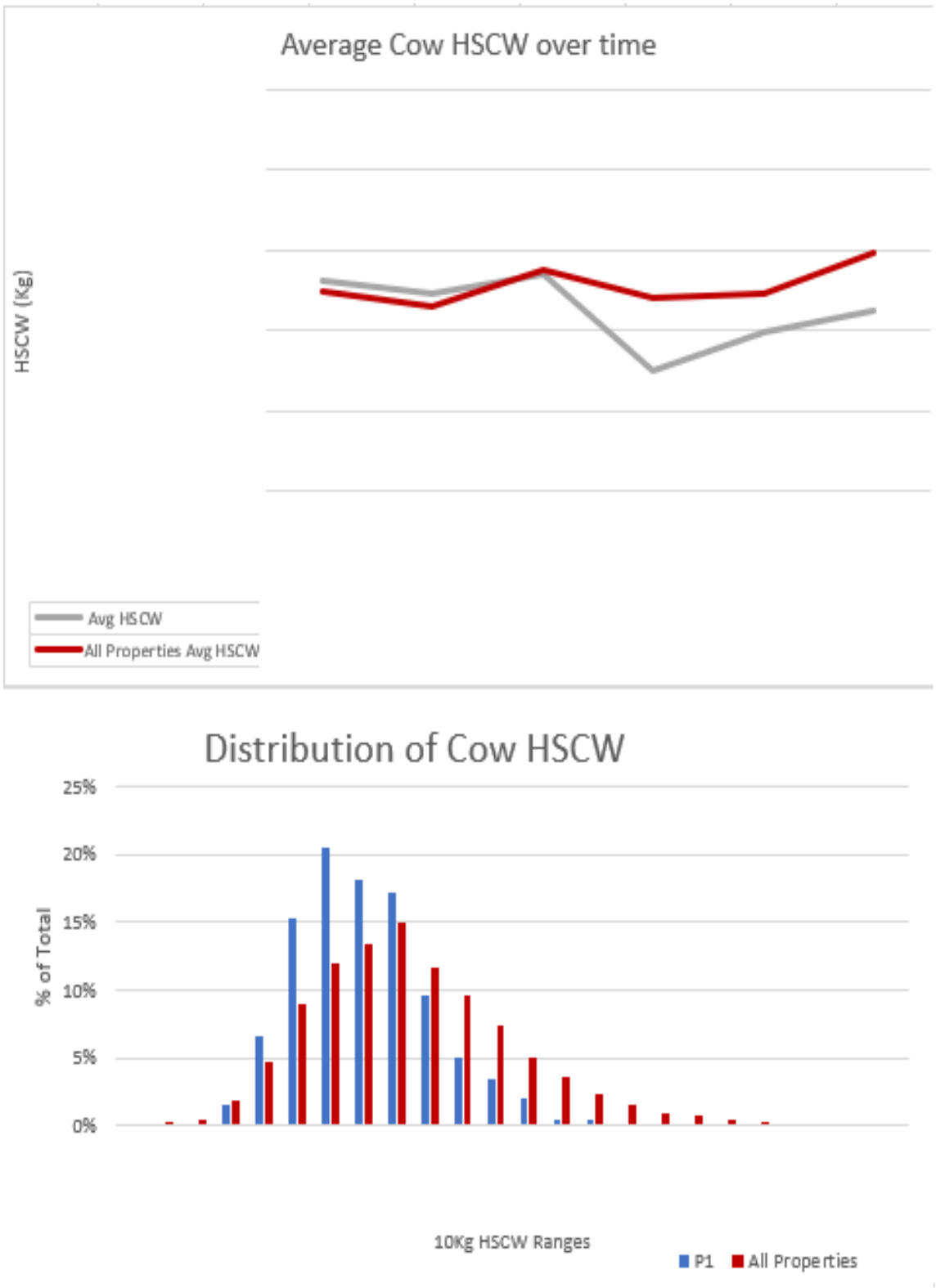

Figure 4: Cull cow dashboard created from external Meatworks feedback sheets

Ongoing testing for the use of Power BI to Link to existing data sources for interactive dashboards for managers. Without the ability to link feedlot and property datasets this information would not be able to be drilled into to provide relevant actions for the property manager. Refer to Figure 5.

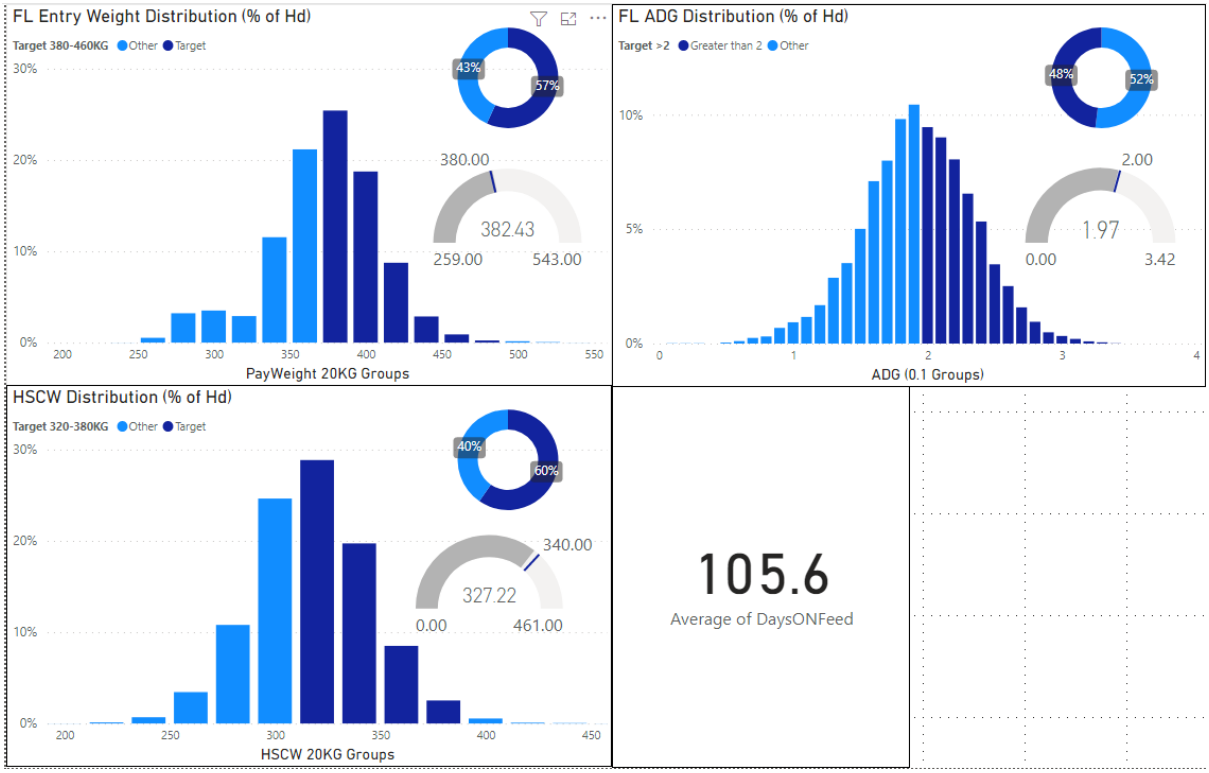

Figure 5: Grain-Fed dashboard for a specific property in 2019

Power BI is predicted to provide an easier to manage link between properties, feedlot, and processing data, although the biggest issue with this tool is getting the data clean before it is interpreted. The Feedlot and Processing data sets are significantly ahead of the Properties in terms of structure, size, and maturity. This creates a granularity difference in the reporting which is available at each section of the business.

New analytic tools provide the ability to compare across properties although for this to happen the way in which KPI's are presented at the Quarterly Managers Meeting needs to be transformed. Including the use of $ per Adult Equivalent (AE's) to compare performance more accurately across stations. The greatest hurdle with the accuracy of these calculations when comparing to other benchmarks is the method of determining the numbers. Due to data gaps some assumptions need to be included which may mean that they are not like for like comparisons. There are still many useful ways that can utilise these calculations internally to compare the performance of different properties within the group. Part of this new reporting method involved a new Monthly Summary Dashboard was created for Station managers which included:

- Breeder performance summary which showed each stations historical breeding performance compared to the overall company average.
- Sales and turnoff summary which displays the current year's sales against budget by stock category as well as historical sales figures
- Meatworks Carcass Summary which shows the current and historical carcass weight performance by station against the company average. Along with the distribution of weights to allow for the managers to visually identify the animals that were out of specifications

- Summary of Labour Units (i.e. Full-time equivalents or FTEs) to show days worked by month against budget broken down by pay rates.
- Helicopter muster summary to show hours spent in a paddock compared to previous years
- Looking to include Feedlot performance in future reports similar to Figure 6.
- Prepared new 10-year historic waterfall production visuals for the easy visualisation and use in management meetings.

Looked at the possibility of linking Rstudio (instead of PowerBI) to the current individual management system to create easy to access “apps” or dashboards to present up to date performance summaries. This requires a new technical skill set which will be explored (time permitting) although due to similarities with the existing and power BI systems it will be continued at this stage.

4.1.5 Application of Business decision tools

Business decisions that have been made available include introducing tighter restrictions of minimum weight for both feeder cattle and cull cows this has been further achieved by the compilation of previously segmented data.

- Analysed the age of condemned meatworks cattle to provide feedback to support anecdotal negatives of an ageing breeding herd such as increased mortality and decreased fertility.
- Analysed the age profiles of breeding bulls to determine which properties need replacements for next season.
- Implemented the estimated calving dates collected from preg-test data to budget for the following season. Planning included timing of Fencing, Mustering, Staffing, Heli-hours, other contracting as well as turn off predictions.
- Working with the current individual management system provider to develop point in time reports that property’s staff can access offline based of the current animals in the yards. This would allow for instant review and decisions to be made a higher level of certainty
- Using the MyMLA dashboard and internal company systems, a comparison was able to be created to compare grid performance against market indicators.
- Provided managers access to property level ground cover reports through forage reporting on the long paddock website.
- Utilised online resources provided by Bush Agribusiness and the Australian Beef Report – 2020 Vision.

4.2 Learning and Development

4.2.1 Learning & development plan

Key to the success of the project was the ongoing professional development undertaken by the digital officer, which was able to be passed on to relevant employees in each business unit. To enable this development a plan was constructed in the developmental stage as seen in Figure 6.

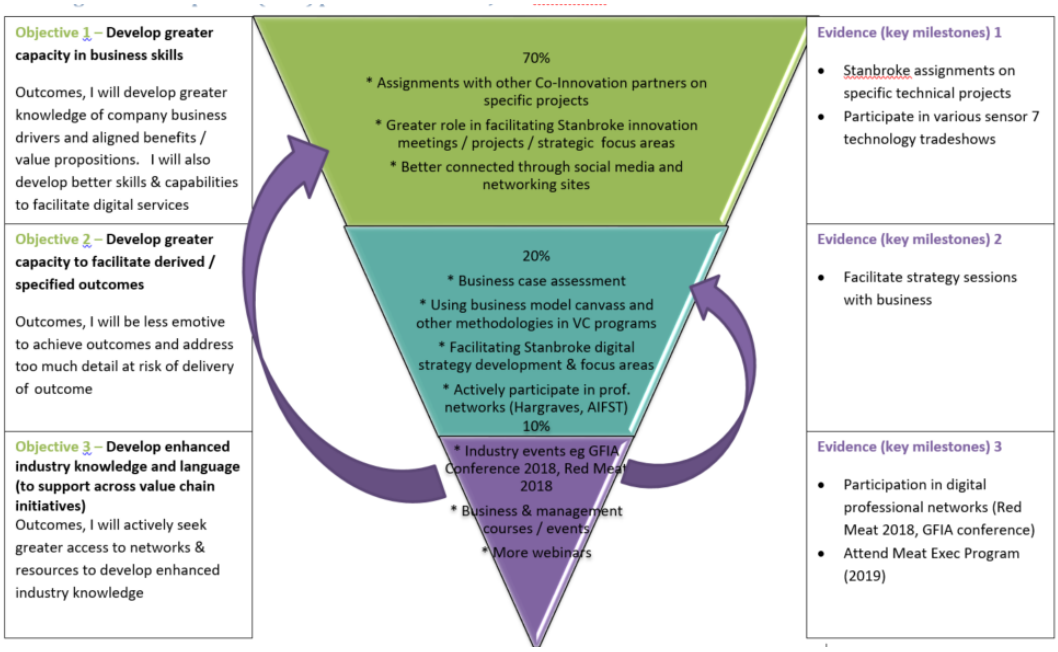

Figure 6: Learning and Development plan

4.2.2 Training & support

A range of training and support initiatives were provided, including:

- Digital officer visited all Stanbroke properties to update properties on digital updates and procedures.
- Provided on the ground training and completed a data capture and management audit.
- Ad hoc support and training on a regular basis.

4.2.3 Participate in internal and external networks to accelerate outcomes

Stanbroke's digital officer participated in internal and external networks to accelerate outcomes, including:

- Co-Innovation & Digital / Supply Chain managers networking event (March 2019). Various workshops and consultants were engaged to accelerate outcomes for each project
- Stanbroke digital officer attended and actively participated in the ISC-MLA "Supply Chain & Digital
- Value Chain Officer Workshop" forum (6th & 7th May 2020) – [See agenda in Appendix, Section 7.2].
- Supply Chain & Digital Value Chain Officer workshop (1st & 2nd December 2020). Refer to program agenda and topics included in the Appendix
- Co-innovation networking workshop (17 & 18 February 2021). Refer to program agenda and topics included in the Appendix
- Co-innovation networking workshop (3 & 9 June 2021). Refer to program agenda and topics included in the Appendix

4.2.4 Skills Development

Multiple professional development activities have been undertaken by the digital officer throughout the project. Although more importantly the digital officer facilitated skills development for new and existing staff that were required to utilise the new data related business processes.

- Digital Officer participated in professional development activities such as a Graduate Certificate in Agriculture at University of New England (UNE).
    - Part of this course has recently encouraged the increased communication between the production and processing segments of the business.
    - Most Recent subjects have focussed on meat technologies, genetic evaluation, feedlot management and breeding program designs.
    - Participated in a "shark-tank" scenario to propose profitable concepts for value adding Processing Plant by-products. Findings were that unless technology and data capture are utilised the labour involved inhibits the scale required to be successful.
- Participated in a recurring internal one-day workshop with the station managers and Head office staff to upskill on interpreting the increased amount of data being sent back to them.
- Continued individual animal management training over the phone and video link to both managers and station staff.
- Conducted one week of hands-on training to newly inducted staff members.
    - This has been a reoccurring event every milestone and will happen at an increased frequency now that the Digital Officer is based out of Cloncurry.
        - Improvements to connectivity due to a related project and work-from-anywhere model that COVID-19 enabled, the digital officer is now based at one of the seedstock properties. This is ideally situated at the beginning of the data chain which enables data capture to be streamlined at utilised through linkages all the way through the supply chain.
- Digital Officer participated in MLA Livestock Advisor Update.
- Digital Officer attended the Integrity Systems 2025 and Beyond Stakeholder Forum.
- Held a 2-day workshop/training session with Head stockman at feedlot/plant to cement the importance of meeting market specifications and showed actual evidence both from data collection and visual inspection.
- Digital Officer Attended the three-day TropAg conference in Brisbane – focused on improving production efficiencies in tropical regions such as north-western Queensland.
- Digital Officer and Stud Manager attended industry workshop day at "Rocklands" conducted by Bush Agribusiness specifically focussed on Collecting & Interpreting Individual Animal Data.
- Various industry webinars during the 2020 COVID-19 lockdown and following Industry webinars that have continued into 2021.
- Attended external properties and Bull sales to expand the 'on the ground' experience of the Digital officer. This should enable relevant data decisions to be influenced by the people in the industry at the very start of the supply chain.
- During Milestone 11 the Digital Officer and 7 Property Managers attended the seven-day RCS Grazing for Profit School in Rockhampton.

- During Milestone 12 the Digital Officer, Managers, Headstockman and other senior station staff attended a Nutrition Edge course by Desiree Jackson and a Low Stress Stock Handling course by Jim Lindsay.
- The Digital Officer and Stud Manager also attended the 2-day Genetics Muster conference in Cloncurry.
- Both Managers and headstockman participated in grazing and nutrition edge programs conducted on site.
- The Digital Officer and other senior staff attended Beef 2021 in Rockhampton to meet with industry stakeholders and attended many presentations aimed at improving the industry.
    - Drought and disaster management
    - Reviewed Ceres Tag, Moovement, Farmbot, Sapien, Cibo, Neogen, Pairtree, Agriweb
    - Rainfall and weather forecasts
    - Data Sharing
    - Digital Resilience
    - Technology in meat processing
    - Pitch to paddock
    - Elders what matter to industry
    - Driving value through the supply chain
    - Pasture dieback

4.2.5 Participate in digital networks

- Participated in various webinars and online discussion forums as well as the quarterly YARN networking event.
- Added to the Digital Value Chain Group's WhatsApp Group. Unfortunately, previous study commitments meant that the Digital Officer was unable to attend the December 2019 "Supply Chain & Digital Value Chain Workshop" in Sydney.
- Attended the Digital Officer and Supply Chain conference (online) in early and late 2020
    - These involved discussions around data custodians, future feedback, market and consumer insights and virtual networking with similar roles.
- Participated in Agri-webs "Fireside Sessions" video conference to bring industry leaders together to discuss micro and macro challenges to the industry and individual businesses
- Participated in industry discussions regarding using data for decisions. This also identified the need for and importance of differing levels of granularity. Most importantly the incentive required for individuals and companies to use and contribute to industry data sets. Benchmarking using industry level data has a diminishing level of potential impact depending where on the spectrum current performance sits. This is partly due to the diversity of the industry and how high-level benchmarking can hide differences in performance.
- Participated in internal and external networks to accelerate outcomes (including the Co-Innovation & Digital / Supply Chain managers networking event (March 2019).
- Stanbroke digital officer attended and actively participated in the ISC-MLA "Supply Chain & Digital Value Chain Officer Workshop" forum (6th & 7th May 2020) – [See agenda in Appendix, See Section 7.2].
- Attended the Supply Chain & Digital Value Chain Officer workshop (1st & 2nd December 2020). Refer to program agenda and topics included in the Appendix (see Section 7.2).

- Unfortunately, due to the above Grazing for Profit School the Digital Officer was unable to participate in the MLA Innovation Meeting in February 2021.
- Met with ISC-MLA's Capability project managers as well as the Stanbroke Agribusiness team and Stanbroke's Co-innovation Manager to discuss the future direction of the Co-innovation programs on 4th March 2021.
- Participated in the two-half day zoom meetings with the MLA Co-innovation roles along with Hargraves in June 2021. Subsequently, participated in a follow-up 15 minute zoom survey about the companies projects.

Participated in internal and external networks to accelerate outcomes, including:

- The Co-Innovation & Digital / Supply Chain managers networking event (March 2019).
- Supply Chain & Digital Value Chain Officer Workshop" forum (6th & 7th May 2020) – [See agenda in Appendix, Section 7.2].
- Supply Chain & Digital Value Chain Officer workshop (1st & 2nd December 2020). Refer to program agenda and topics included in the Appendix (see Section 7.2).
- Co-innovation networking workshop (17 & 18 February 2021). Refer to program agenda and topics included in the Appendix (see Section 7.2).
- Co-innovation networking workshop (3 & 9 June 2021). Refer to program agenda and topics included in the Appendix (see Section 7.2).
- Also participated in two sessions with prime motive to discuss the future of the feedback system being developed by MLA.

4.3 Digital systems & processes

4.3.1 Steering committee meetings

It was noted that the Digital Officer project (p.pip.0761) was at a critical decision Go / No Go point (at the conclusion of Milestone 3 Digital program development & implementation had been completed). Specifically, it was agreed that the outcomes to date and the priorities over the next 12 months are endorsed by the project steering group consisting of Stanbroke, MLA & MLA Integrity Systems Company (ISC).

It was confirmed as a result of initial project steering group meeting (on 10/4/2019) that:

- Stanbroke's Digital Officer provided an overview of outcomes and achievements over the first three Quarters of the project (i.e. Milestones 1-3) demonstrating significant progress in developing digital processes and providing a draft digital strategy.
- Stanbroke's draft digital strategy & priorities for the next 12 months were presented.
- MLA's industry digital priorities shared by the MLA ISC group.
- Stanbroke advised that the initial Stanbroke Digital Officer was moving away from the business (for personal reasons) and that Stanbroke was actively looking to replace the role as a priority.

The project steering group approved the continuation of the project to Milestone 4 and beyond on the basis of Stanbroke's current digital priorities that were presented for the next 12 months (i.e. Approval of the Go/No go decision point). Furthermore, it was agreed by the project group to support Stanbroke in recruiting the role and to keep the project open to allow recruitment to take place.

Following the Go / No Go meeting on 10/4/2019 Harry Evans was appointed as the Stanbroke Digital Officer as of the 26/04/2019.

In the preparation of Milestone 5, a Data/Digital Strategy on a Page was also developed to provide clear goals and summarise existing and proposed projects.

It was noted that the Stanbroke Digital Officer project (p.pip.0761) was at a critical decision Go / No Go point (now that Milestone 5 Digital program development & implementation had been completed). The project steering group met at the Stanbroke Fortitude Valley Office on 19/9/19 and approved to go ahead with the next milestone.

A Project Steering Group meeting that was conducted on 9 October 2020 provided approval to progress and complete a detailed business case and cost benefit (i.e. Milestone 2 of the connectivity project). The independent review (Greenleaf Enterprises has completed an initial commencement planning meeting, whereby information (for a mixed connectivity solution) has been provided by Stanbroke to enable the Cost Benefit Analysis (CBA) to begin. The expected outcome will be the project steering group will review the outcomes of the business case for approval for the project to progress. Should the project progress, a variation of the original agreement will be required to support a more cost-effective mixed solution approach.

The project steering group met in person and via video conference with MLA and Stanbroke project steering group to discuss the future direction of the Co-innovation programs on 4th March 2021. MLA-ISC and Stanbroke Steering group met to discuss the future of the program and the planning steps that needed to take place to get there.

4.3.2 Enabling digital and data capabilities

Conducted a major overhaul of the existing connectivity project with assistance of a cost benefit analysis performed by Greenleaf.

- Completed onsite inspections of each complex to prepare for the connectivity project. Cloud-based data backups were set up and an investigation was conducted to link fuel and power consumption to an inventory reporting system.
- In Milestone 12, Contractors and internal staff have commenced the installation of the new equipment at multiple locations.
- Work has begun linking the properties, feedlot and processing plant through to one cloud based centralised data storage hub.

A Go/No GO meeting was conducted by the project steering group in February 2020.

The outcome of the project steering review meeting (Go/No Go review meeting #1 on 21 February 2020) was that there was approval by the group to progress the project. In lieu of the previous floods, and as a result a shift in priorities, it was agreed that a corresponding variation of the agreement was required. MLA proposed an independent business case on the potential benefits would strengthen the revised proposal for increased budget. It was supported to include bringing the independent cost benefit analyses (CBA) forward to enable Stanbroke & MLA to use the outcomes of the CBA to inform the next steps.

The recommendations were:

- MLA proposed an independent business case on the potential benefits would strengthen the revised proposal for increased budget.
- MLA to commission concurrently independent cost benefit at MLA's cost, providing outcomes to Stanbroke.
- Steering group approved the proposition to:
  - i) Bring forward the independent cost benefit to share early outcomes with Stanbroke
  - ii) Stanbroke to seek internal approval to progress (based on business case)
  - iii) Wi-Sky to design & order phase 1 components
  - iv) Markup any changes to the agreement to support a variation to the contract as required

The second Go-No Go decision meeting was conducted by the project steering group on 9 October 2020.

It was noted that due to the significant disruption of Covid, delays experienced in progressing CBA and the build phase. Stanbroke had reviewed alternative connectivity solutions, and proposed a mixed solution approach which was assessed by Stanbroke to be significantly more cost effective and viable.

Greenleaf Enterprises had been engaged and agreed to schedule the independent CBA during Milestone 2 of the connectivity project., in time for the agreed next steering group meeting. Both the CBA and following steering group meeting was successful in displaying the benefit of going ahead with the variation. The connectivity project is now partway through the initial build phase (i.e. in Milestone 3 & 4) at multiple different locations. The areas that have had the new hardware installed have seen immediate benefits in term of connection reliability – although work needs to be done on the software side to bring each system together. Refer to Figure 7.

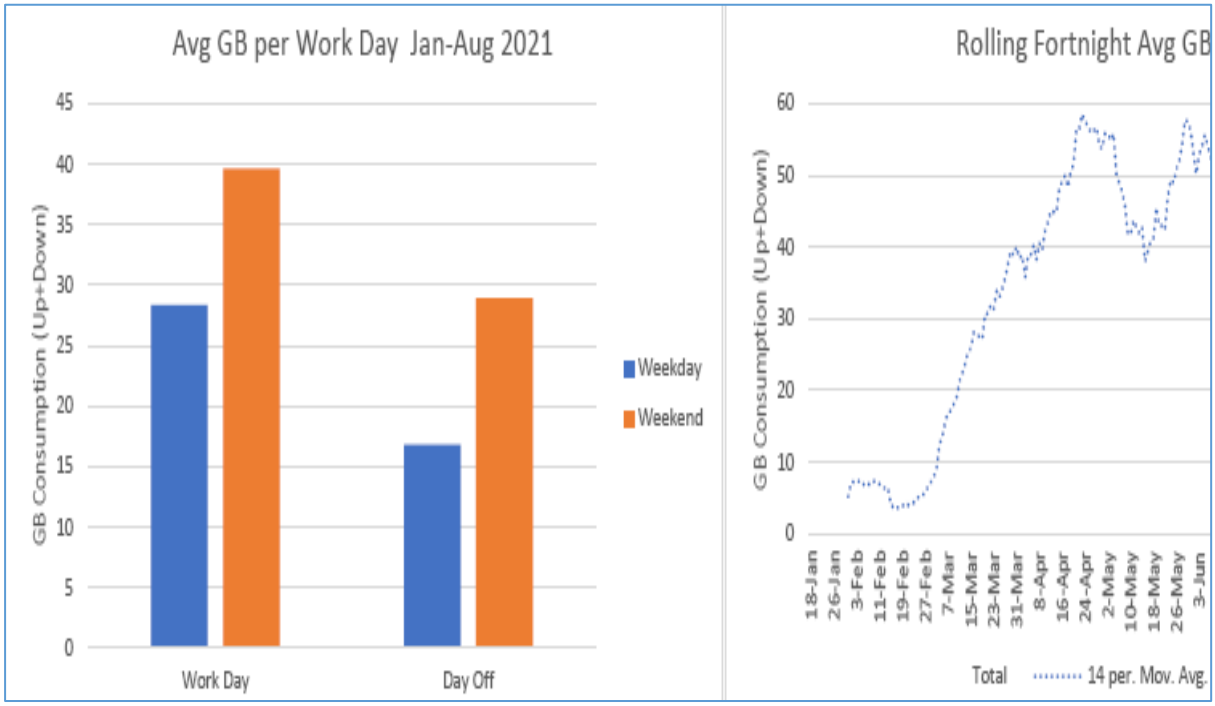

Figure 7: Initial Data consumption improvements for connected Properties

4.3.3 Discovery exercises – New digital and data capabilities

The Digital Officer and other senior staff attended Beef 2021 in Rockhampton to meet with industry stakeholders and attended many presentations aimed at improving the industry. There were many IoT technologies available, and many were evaluated, including:

- Drought and disaster management
- Reviewed Ceres Tag, Moovement, Farmbot, Sapien, Cibo, Neogen, Pairtree, Agriweb
- Rainfall and weather forecasts
- Data Sharing
- Digital Resilience
- Technology in meat processing
- Pitch to paddock
- Elders what matter to industry
- Driving value through the supply chain
- Pasture dieback

There was an opportunity to get hands-on and explore the latest digital technology and data-driven products at Meat & Livestock Australia's (MLA) 'Digital Farm' at Beef Australia 2021 in Rockhampton.

The Digital Farm is part of the AgTech & Innovation Hub at Beef Australia 2021 and was displayed and demonstrated the latest technologies for water, soil, and livestock management as well as asset infrastructure that can assist with on-farm productivity and profitability. It represented a great opportunity for red meat producers to see what is happening in this space and what new developments are on the horizon.

MLA's Digital Farm demonstrated the difference digital technology and data could make to production and displayed new tools to assist producers with decision-making that may improve on-farm productivity. It also demonstrated how technology utilised in the defence and security industries may be harnessed and applied in the Australian Beef industry.

Displays and demonstrations included:

- water management sensors and app-driven weather stations
- soil moisture sensors and satellite-driven pasture management, crop health systems
- livestock management smart tags, BeefSpecs camera, cattle tracking collars and electric fence monitors
- farm management dashboards and ROI calculators.

With 38 Australian and international tech companies on display in the inaugural Ken Coombe Tech Yards, there was plenty of Agtech to choose from.

Some highlights included:

- CQUniversity were on the ground helping producers navigate the impressive array of products and services with a free five-minute 'Agri-Tech Check' service.
- A deeper dive into data and digital, there were the Tech Yard Talks on the RaboTruck Stage exploring tech innovation, data sharing, blockchain, genetics, AI and more.
- Also making headlines was the launch of KPMG Origins – Trusted Beef Traceability, a new blockchain track-and-trace project with KPMG, MLA and Argyle Foods Group. The system

allows consumers to scan a code on the product label to access paddock-to-purchase information about the breeding property, raising conditions, transport and processing practices, certification and more – all fed by data from the Internet of Things (IoT).

- Water Telemetry the real 'gateway tech'
- Explore Beef Week exhibitors on AgTech Finder:
    - Mirragin Unmanned Systems
    - AgriWebb
    - Agersens
    - Farmdeck
    - Cibo Labs
    - Farmbot Australia
    - Sapi Technologies
    - inFarm
    - Pairtree Intelligence
    - Smart Paddock
    - Escavox
    - OptiWeigh
    - Telstra

4.4 Independent third-party evaluation of co-funded Stanbroke Digital Supply Chain strategy

An independent third-party evaluation of the co-funded supply chain and digital capabilities programs was commissioned by ISC in 2021 (project V.ISC.1933). A summary of the findings related to the independent review of the Stanbroke Digital strategy is summarised below (Also refer to the Appendix, see Section 7.3):

4.4.1 Background

In 2017 the Integrity Systems Company (ISC) board approved funding for up to 15 co-funded Supply Chain Feedback Extension Officer (SCFEO) positions. The purpose of these positions is to support the development and implementation of feedback systems and associated extension materials to improve producer decision making and management practices for enhanced farm productivity. The program evolved to also include Digital Supply Chain Officer (DSCO) and Digital Marketing Officer (DMO) roles to provide the specific support required within individual partner businesses to improve data use and insights for decision making and to support data integrity systems. In November 2020, ISC engaged Beattie Consulting Services, Inspiring Excellence and Warren Straw Consulting to undertake an evaluation of the co-funded resources program as a first step toward redevelopment of a business case to guide future investment in the program. This included reviewing the outcomes of the current Stanbroke Digital Supply Chain role (P.PIP.0761).

4.4.2 Project scope and objectives

The objectives for the ISC co-funded resources program evaluation involved completion of the following activities:

1. Review the performance of Digital Supply Chain Officers and Supply Chain Adoption Officers to date, including:

- Alignment of co-funded resources with ISC 2025 strategy and contribution of impact
- Assessment of performance to assist employers in supporting Livestock Data Link (LDL) development and/or integration within supply chain (this can include third-party LDL systems)
- Assessment of benefit co-funded resources are delivering along the specific supply chain, including the benefit delivered directly to producers within these supply chains
- Assessment of current structure of role and evaluation of whether roles and responsibilities of resources are currently meeting objectives, including career level/position within company to influence its digital strategy and implementation of digital resources

2. Review of internal contribution to impact of co-funded resources, including a review of internal value creation being developed through co-funded resources and recommendation of any changes to current structure and management for maximum impact.

3. Impact Assessment: Assess and define the predicted triple-bottom line impacts of investments made to date. The economic impact will be based on measuring the contribution to adoption and impact for key outputs (products) as noted above. Social and sustainability benefits (such as improving a processor's general innovation capability) will also be measured via the Meat and Livestock Australia (MLA) triple-bottom line impact assessment framework, which will be provided.

A brief analysis of each of the 15 Supply Chain Feedback Extension Officer positions will be included, including commentary on the level of success achieved in each position against the above impact criteria.

4.4.3 Approach and methodology

The evaluation methodology involved two key stages:

Stage 1: Assemble and review available project information and data for each role.

Stage 2: Complete a 360-degree stakeholder engagement process for each role via a series of phone interviews.

Stage 1 primarily involved assembly of project milestone reports and obtaining the most recent reports which were delivered in the interim, along with other background information relevant to each of the roles.

Stage 2 involved development of a series of questionnaires for a range of stakeholders for the 360-degree review in consultation with MLA/ISC. These questionnaires were initially piloted with a small number of stakeholders, and reviewed and revised as required. Of the 16 positions identified in the project evaluation objectives, 13 were included in the review as the remaining three had only just commenced or been contracted.

The 13 co-funded roles reviewed are currently at various stages of delivery relative to their contract term of employment, with one role being cancelled by the industry co-partner prior to the end of the contracted term. Therefore, the number and type of stakeholders engaged for the 360-degree reviews varied depending on the stage of delivery of each co-funded role.

In addition to interviews with each of the 13 incumbents, interviews were conducted with eight MLA/ISC stakeholders, and with 20 representatives from industry partner organisations (13 interviews) and a range of related beneficiaries and service providers (7 interviews).

4.4.4 Results and findings

Refer to Appendix, see Section 7.3 [Source: Evaluation of the Integrity Systems Company Co-Funded resources program (Project V.ISC.1933)].

4.4.5 Conclusions and recommendations

The evaluation of the ISC co-funded resources program has found the program overall, to be very successful in supporting partner companies to drive digital innovation across the supply chain. The key findings supporting the continuation of the program include:

1. There is evidence to show that companies supported through the co-funded resources program have implemented new, innovative digital solutions to collection, integration, analysis, storage and visualisation of data across different parts of the supply chain from procurement of livestock to marketing the end product.
2. The incumbents in the co-funded roles have tested, trialled, piloted, innovated and adapted new digital innovations within their companies. This has led to improvements through feedback provided to suppliers and created processing efficiencies for the company as well as improving the use of data to gather insights and make decisions.
3. The incumbents have been instrumental in driving the process to embed new digital innovations into day-to-day operations by building capability within the partner companies to support utilisation of digital innovations to deliver on company priorities.
4. The Supply Chain Feedback Extension Officers have made progress in developing feedback systems to suppliers/producers to enable carcass quality and disease/defect data to be provided on an individual carcass basis. While this is still an area that requires further work to link feedback to on-farm practice change and improvements in carcass quality, the foundations have been built to move this work forward.

This review has also identified that most existing roles are likely to continue beyond the current co-funded employment terms regardless of potential ISC ongoing investment, and that most companies appear willing to continue partnering with ISC in this program if the opportunity arises. The issue for MLA to consider now is if the potential internal value to MLA/ISC, and/or potential increase in speed and quality of outcomes achieved by the roles with ongoing MLA co-investment, is sufficient to justify further investment in existing roles, especially considering they may continue anyway. Alternatively, MLA may consider there is more value to be gained by investing these resources elsewhere, either in more new roles in the same program (even potentially some within existing partner companies where a need for additional digital resources has been identified), or in other projects entirely.

If the co-funded resources program does continue in the future, whether that includes continued investment in existing roles and/or investment in new roles, the following recommendations are provided:

- MLA appoints an overall program manager to lead the program, drive the strategic direction and implementation of the program and to manage all positions, along with a network of

internal MLA/ISC mentors who are assigned to individual roles according to specific knowledge and skill areas identified to add maximum value to each role.

- Increased strategic planning around where investment is targeted to achieve program objectives.
- Develop a program Communication and Engagement Plan to support a more strategic approach.
- Improve the ability of both MLA and company partners to measure and report on the success of program investment through defined monitoring and evaluation processes.
- Review and clarify role employment criteria and employment terms.
- Identify opportunities for increasing the value of the network of co-funded roles. Opportunities include providing more opportunities for networking beyond the current 2 meetings per year (COVID-19 permitting) e.g. additional training workshops on topics of mutual interest, such as change management, or concurrent workshops on different topics at the same event with opportunities for co-mingling, or opportunities to present to each other on specific role achievements. Also, including team building activities and/or joint projects as part of the networking events to build relationships and trust between incumbents.
- Work with partner companies to review opportunities to increase adoption of available feedback by buyers and suppliers to improve livestock procurement and farm management decision making. Suggested opportunities include more face-to-face and one-on-one engagement and support for buyers to assist with adoption. Also define target metrics and measures of success for buyers in the use of feedback data, specifically more one-on-one support of producers with advice tailored to specific businesses.

5. Key findings, messages and challenges

5.1 Key findings

The key findings from this project included:

- A detailed and focused position description is required to hire the correct candidate.
- Time savings and company knowledge can be achieved by appointing an internal hire to the position
- While program development should be intensively performed at the beginning of the project, it should be periodically reviewed and amended where necessary, evidenced by many variations to the focus over the relatively short three-year period of this project.
- Need to establish a long-term vision, especially for data and technology-based solutions as due to the increasingly fast pace of change, a new implementation may be outdated by the time it has been merged into existing procedures.
- Clear documentation and communication in the development stage should allow anyone to pick up where the last person left off. This includes documents and activities such as:
    - Brainstorms
    - Current technology stack
    - Current data audit
    - Strategy on a Page, with definable boundaries and actionable tasks
    - 5 – 10-year vision, broken down into relevant sections
    - Road map of other related projects both within the company and ideally related external projects as well

- Before a digital program can be implemented, a detailed understanding of the current environment and procedures is required
    - Departments/ staff might be using the same data for a different outcome
    - The next key step to success is identifying the different data maturities withing each section of the company
    - The findings from this project are that problems with data analysis can be caused by two broad implications
        - Unclean or lack of data, this is typical of a primary producer that might have information recorded in various locations, with the inability to combine those datasets or rely in the accuracy/consistency from one user to the next
        - Clean but complex data, businesses such as feedlots and processing plants are good at collecting consistent and reliable data, the issue at this end is due to the enormous datasets and complex structures it is difficult to interpret and/or gain insights without data manipulation
            - For this to benefit the industry these areas need to provide easy to interpret feedback to producers to foster actionable decisions
- Once the current state of the data is understood, data analysis and insights for business decisions can commence
- The most effective way to create ongoing charge of behaviour is to work with the people on the ground in their usual work environment
- New digital and data approaches are not always going to have benefits for the person you are asking to make the change, benefits could be witness further down the chain and as such this needs to be communicated and the message that everyone is on the same team needs to be communicated
- No one singular technology or software provider is going to have all the desired features
    - Most cases require multiple different solutions and care needs to be taken that these are either compatible or that the resources are available to combine these data sets
    - The only other option is to build to the solution from the ground up with will have a greater up-front cost and longer time frames due to user testing internal skill sets
- Critical to the success of a project like this is the ongoing development to staff and giving everyone access to the resources they require to exceed in their job.
    - This will improve staff productivity, engagement and keep people attached to the industry for longer
    - It also gives the option to utilise the new skills within the business
- It is highly recommended that staff be encouraged to participate in industry networking events, most likely there is another company dealing with (or already solved) the same issue.
    - This allows for new ideas and discussion to flow freely and benefits both side of the transaction of information.

5.2 Key messages

The program was considered successful by providing a catalyst to fast-track digital innovation capability within Stanbroke, namely:

- Developing skills and capabilities in data and digital capacity [Key learning #1]
- Recruitment and lines of reporting to enhance practice change [Key learning #2]

- Networks delivering benefits by accelerating uptake of new methods [Key learning #3]
- Building trust in company's data to make decision [Key learning #4]
- Developing a data culture [Key learning #5]

5.2.1 Developing skills and capabilities in data and digital capacity [Key learning #1]

Limitations of this role is that due to the fact the role was trailed as a pilot and developing over time. Also, the lack of structure the initial stages of development over emphasised on what could be achieved within the timeframe of the project. Goals must be realistic and achievable with the allocated resources.

5.2.2 Recruitment and lines of reporting to enhance practice change [Key learning #2]

The initial phase involved recruitment and engagement of a full-time employee. A suitable candidate was sourced from within the business initially with the required skills and capabilities from the Agribusiness team to develop and implement Stanbroke's digital and supply chain strategy. There was a transition to a new role when the digital officer moved away from the business. This was an opportunity to review the structure of the agribusiness team over time such that the new recruit reported directly to senior management to ensure the project could influence and drive change in supply chain capabilities.

5.2.3 Networks delivering benefits by accelerating uptake of new methods [Key learning #3]

Frequent networking opportunities provided by MLA and ISC with other Digital and Supply Chain co-funded roles (twice annually) provided significant benefits through sharing collective experiences to accelerate uptake of new methods and techniques.

5.2.4 Building trust in company's data to make decision [Key learning #4]

The biggest challenge is the change management process, getting people in the company to trust, understand and use these new approaches. Specifically, the challenges were:

- To integrate multiple data sets throughout the supply chain.
- To create meaningful information that can be delivered to decision makers in a timely manner.
- Allowing them to be more proactive rather than reactive to the situation or environment they face to help drive productivity and profitability.

Key lessons for developing and building trust across the business were:

- The first step was for the company to decide to capture data on properties. The digital officer(s) had to work (on the ground) with operational teams to better understand their processes and included them in the design process.
- Data capture is a new skill for most people. The key lesson was to be patient and provide plenty of training and support.
- In addition, user experience can't be underestimated. This is a new process and needed to build an "experience" that caused the least amount of disruption.

5.2.5 Developing a data culture [Key learning #5]

A "leading from behind culture" was required by the Digital Supply Chain officer(s) to address these challenges with data adoption and confidence in making decisions from the data. Finally, one of the biggest challenges was to maintain data integrity.

5.3 Benefits to industry

The key benefits to industry of this co-funded position were as following:

- Professional development and capability building for all levels of staff, many of these individuals will be attracted to staying in the industry by allowing increased engagement and developing individual skill sets.
- Increasing the animal specifications for both internal and externally processed animals
- Access to tools to allow for better land management
- Breaking down the barriers to sharing data for mutual benefit
- Increasing remote station workers connectedness to the modern world through improved connectivity and attracting skilled staff to move to regional communities.
- Provided many examples of how using data for decisions can benefit a red meat operation at many different stages of the supply chain

The co-funded roles have contributed toward achievement of a range of MLA key outputs (products) and their value propositions, including:

- Economic benefits
- Environmental/sustainability benefits
- Socialised benefits

5.3.1 Economic benefits

The Australian red meat industry has a shared vision to double the value of red meat sales as the trusted source of the highest quality protein, and MLA has identified a range of key areas of strategic focus to support delivery against this vision. One of these focus areas is around ensuring that decision making is informed through data and insights.

The ISC co-funded roles are supporting the delivery of impact for industry in this focus area by assisting to increase the efficiency with which data is collected, integrated, analysed and presented for use to decision makers across the supply chain. Some examples of savings in labour or operating costs were provided in some cases, however overall, insufficient data was available to assess the value of economic impact due to MLA investment in these roles. The Supply Chain co-funded role are potentially contributing primarily by providing tools and enabling outcomes that support building industry capacity and capability to drive improved use of data for traceability and decision making.

5.3.2 Environmental / sustainability benefits

The independent review (i.e. project V.ISC.1933) identified many of the co-funded roles have contributed toward achievement of environmental and sustainability outcomes. They were also

found to be contributing to improving animal well-being by increasing data capture and feedback to producers around animal welfare issues and thereby increasing awareness of the health and well-being of animals to identify and deal with any major issues. Improved data systems are also supporting feedlots to more accurately identify key sources of mortality and morbidity so that they can be addressed more rapidly and effectively. In contributing to impacts in these areas of animal well-being and climate change mitigation, the roles are also assisting industry to better meet consumer needs and to build trust among customers and consumers of Australian red meat.

5.3.3 Social benefits

A key intended outcome of the co-funded program is to build digital innovation capability across the supply chain to better equip the industry to progress more rapidly toward increasing red meat carcase values. During the independent third-party review process (project V.ISC.1933), partners including Stanbroke was asked to assess how the co-funded roles have contributed toward increasing the ability of partner companies to take advantage of new and evolving digital technology. The findings showed in terms of ability prior to commencement of the role, expected ability by the end of the current role employment term, and estimated ability at the same time if the role did not exist. The overall role contribution is the difference between the expected ability of the business to take advantage of new and evolving technology with and without the role.

5.4 Challenges and issues

Limitations of this role is that due to the fact the role was trailed as a pilot and developing over time. Also, the lack of structure the initial stages of development over emphasised on what could be achieved within the timeframe of the project. Goals must be realistic and achievable with the allocated resources.

The challenges identified in the project were:

- Support for properties is minimal at times especially when it comes to software and hardware support. Stanbroke has one dedicated on ground operational support person.
- Connectivity has been inconsistent and unreliable requiring ongoing technical support. During the significant down periods, it has enabled ramping up of the R&D associated with reporting across the business with several new reports built and now being used daily across properties.
- The priority will continue to be working with the operational teams on what insights the data/reports are providing property operatives.

6. Conclusions and recommendations

6.1 Conclusions

The program was considered successful by providing a catalyst to fast-track digital innovation capability within Stanbroke, namely:

- Developing skills and capabilities in data and digital capacity [Key learning #1]
- Recruitment and lines of reporting to enhance practice change [Key learning #2]
- Networks delivering benefits by accelerating uptake of new methods [Key learning #3]
- Building trust in company's data to make decision [Key learning #4]
- Developing a data culture [Key learning #5]

The key findings included a clear and documented development stage gave benefits and clarity to all stakeholders, details and accurate audit/map of current digital procedures and technology stack, on-site peer-to-peer contact was significantly more beneficial than any other form of contact, staff professional development was key to engagement and realised productivity gains and interactions between external industry participants create invaluable connections to collectively work toward a common goal. Multiple industry benefits were witnessed, such as keeping people attached to the industry, increasing grid performance both internally and externally, increased ability to manage land systems more effectively and breaking down barriers to sharing data for mutual benefit. It is recommended that these roles proceed across a broad range of industry companies with the ability for existing participants to re-engage with the program with a more focussed vision. One of the major drawbacks of the program was the short timeframes and physical limitations of how much could be achieved with given resources.

The project (Milestones 1-13) was successfully completed with the following deliverables being achieved:

- Develop strategic portfolio of digital opportunities
- Data analysis and insight generation process
- Track and report on quantifiable benefits of digital projects.
- Participate in internal and external networks to accelerate outcomes.
- Action steering committee tasks

Stanbroke is committed to this Digital Strategy by employing additional resources including the Stanbroke-MLA co-funded digital officer to implement a greater use of objective measurement technologies and sensors to capture & analyse live animal, carcase and product data.

6.2 Future research and recommendations

The next phase will focus on making improvements to data cleaning and refining the data collection process along with the introduction of new management reporting and software trials. Stanbroke's medium to long term goals are to continue to develop capabilities in digital and data integration across the business. This may be part of the soon to be commenced Value Based Marketing (VBM) collaborative project with MLA.

The following recommendations include:

- Extend Water monitoring program to other adoption initiated – in discussion with MLA
- Review new agribusiness data/digital opportunities:
    - Individual Animal management: Early identification of markets building cost effective supply chains
    - Supply chain feedback loop: Breeding fit for market animals
    - Stanbroke Data & Objective Measures Strategy & Priorities (1-5Yrs)
    - Supply chain feedback loop: Breeding fit for market animals:
- Connectivity will be the platform that underpins the Stanbroke digital strategy. As a priority Stanbroke to undertake a number of connectivity initiatives to connect all properties & the feedlot to allow seamless flow of livestock data
- Stanbroke is looking to review the option of integrating industry data (with sample data package to be provided by MLA's Integrity Systems Company (ISC).

Following are the recommendations specific to Stanbroke:

- As a priority to undertake a number of connectivity initiatives in 2021 to connect all properties & the feedlot to allow seamless flow of livestock data (priority #1): Connectivity will be the platform that underpins the Stanbroke digital strategy. The Greenleaf Cost benefit analysis was completed with overwhelming evidence to proceed with the variation to a mixed technology solution. Stanbroke is reviewing the option of integrating industry data with sample data package to be provided by ISC.
- The second priority is to facilitate the linkages of datasets between business units to be established. Which will allow for up and down stream effects to be modelled to a particular decision.

The next period will focus on making ongoing improvements to data cleaning and refining the data collection process along with the introduction of new management reporting and software trials.

Recommendations for other companies looking to employ a similar role to a digital officer are:

- It is likely a broader skill set (with ability to acquire) will be more valuable than a specialised technical skill set.
- Candidate needs to be able to communicate clearly and effectively with all levels of staff from entry level to corporate management
- Resources need to be allocated to allow for the digital officer to travel on-site, which facilitates many benefits:
    - Increased trust and employee engagement
    - Reduced gap between head office and operations
    - Solutions can be built from the ground up
    - Both digital officer and staff that interact can learn from each other via peer-to-peer learning
    - Many processes are not accurately documented and being on site allows observation of actual procedures which gives the ability to improve

- Upper management needs to be involved in setting the companies long term goals and strategy, along with this the digital officer needs to be able to questions and reason with decisions with the intention of improving them.
- Clear documentation of goals and performed activities are critical to measuring success.

Limitations of this role is that due to the fact the role was trailed as a pilot and developing over time. Also, the lack of structure the initial stages of development was over emphasised on what could be achieved within the timeframe of the project. Goals must be realistic and achievable with the allocated resources.

- Issue with managing R&D pipeline with so much R&D activity across the business, need for a co-ordinated internal process to manage ideas in the pipeline.
- Turnover of key station staff has set back some individual animal management data collection although once training was completed this was guided back on track.
- Due to significant weather events and global COVID-19 impacts many projects were delayed due to hardware and labour shortages.

7. Appendix

7.1 Stanbroke's Digital Strategy

7.1.1 Overview

Enhance productivity though enhancing digital capability, specifically through the provision of advanced analytics of data sets to generate new insights for the business. Stanbroke is a beef solutions business, and the supply chain starts at conception of animals on our northern properties and finishes with customers all over the world.

7.1.2 Long term road map

- To achieve Stanbroke's Agribusiness goals, Stanbroke's priorities for business improvement were identified to be categorised into four (4) broad focus areas, which was based around the connectivity infrastructure proposed.

7.1.3 Supply chain feedback loop: Breeding fit for market animals

- Develop a feedback loop for the managers to provide actionable items to improve supply chain performance.
- The long-term goal was to create a just in time supply chain with forward marketing and selling opportunities and maximum efficacy.

7.1.4 Stanbroke Data & Objective Measures Strategy & Priorities (1-5Yrs)

- Stanbroke's priority is to develop data transfer across its entire vertically integrated operations including properties, feedlot, and export processing facility to make more effective real time business decisions.
- Stanbroke's vision to fully utilise data across its entire operations by embarking on a five-year digital strategy to enable improved real-time business decisions using data generated from more accurate means.
- Connectivity will be the platform that underpins the Stanbroke digital strategy.
- Stanbroke is committed to this Digital Strategy by employing additional resources including the Stanbroke-MLA co-funded digital officer to implement a greater use of objective measurement technologies and sensors to capture & analyse live animal, carcase and product data.

7.1.5 Animal Nutrition: Getting animals to specification at the highest profit margin

Work with managers, nutritionist, and feed providers to achieve efficiencies, including:

- NRIS Testing database.
- Recording of supplementation program and stocking rates
- Using NIRS data to link in with satellite data to develop rates of change and to predictivity manage pasture.

- Predictive modelling on the pasture and cattle weight gains to optimise the supply chain.
- The long-term goal was to use satellite imagery and a predictive algorithm to do our sales forecasting.

7.1.6 Individual Animal management: Early identification of markets

Usage of Kool Collect to collect better data, improve animal performance, including:

- Working with Innovation manager to create cattle that better fit our end customers specifications.
- Calculation of Key Performance Indicators for each animal (i.e. breeder's days to calving and prodigy profitability).
- Link animal weight gains to satellite imagery to help improve the predictive model.
- Use our genetic model to improve our breeding herd first by focusing on the bulls then via genomic maternal testing.
- Using remote heath monitoring to lift our branding percentage on each property.
- The long-term goal was to pull a hair sample at weaning then draft that animal off into destination market pens and then manage their life according.

7.1.7 Individual Paddock Management: Managing the supply chain assets

Collecting data on individual paddock performance and Feed base, including:

- Calculate potential production of each paddock after the wet season to best manage ground cover.
- Using pregnancy test data to calculate optimal time for weaning a paddock and evaluation vet performance.
- Create land type benchmarking for nutrition and production so we can compare across different properties.
- The long-term goal was to have a model which we can feed weather predictions into which will tell us how much feed we will have until the next wet season.

7.1.8 Connectivity Project – In-house platform to build the supply chain from

The biggest roadblock to achieving any of the goals outlined above is existing connectivity solutions, which needs to be developed in-house by Stanbroke.

- Optimise business decisions from the GEO locations of the properties (i.e. Farm 4D maps), flat landscape with fibre internet available in Cloncurry
- Infrastructure to be used in the future for UAV docking providing automated monitoring
- Wi-Fi system to connect the back haul of on-farm weight prediction technologies
- Faster cloud-based activities and real time analytics
- Using remote monitoring to better align labour use
- Providing video conference training for staff
- Evaluate and utilise further new technologies to increase profitability

7.1.9 Other current MLA projects – Bringing the industry along with us

- Feed base predictive model
- Remote water monitoring
- Nutrition workshops for staff
- Connectivity project

7.2 Networking events

7.2.1 Supply Chain & Digital Value Chain Officer workshop (6th & 7th May 2020)

Integrity Systems
red meat customer assurance

Supply Chain & Digital Value Chain Officer workshop

mla
MEAT & LIVESTOCK AUSTRALIA

Day 1 - Supply Chain & Digital Value Chain Officer Workshop (Wednesday 6 May)
1:30pm start (half day)

- **Consumer Insights Updates -** Putting rejecters into context (including vegans) with Nat Isaac
- **Market Update -** A look at herd & flock numbers and the current forecast with Adam Cheetham
- **Customised Adoption Packages for the Red Meat Supply Chain (Supply Chain Adoption program -** Understand how MLA & ISC can provide support to maximise the impact of your producer engagement activities to benefit your business with Dave Packer
- **Sustainability and CN30 Update -** Program updates since the group Webinar with Doug McNicholl

Day 2 - Supply Chain & Digital Value Chain Officer Workshop (Thursday 7 May)
9:00am start (half day), finish around lunch time

- Traceability across the supply chain - The Australian red meat industry has a global reputation as a supplier of clean, safe and natural product. To maintain our competitive advantage, the red meat industry must peruse and invest in new technologies and approaches. There is opportunity to apply improvements to integrity systems from the farm through to the end consumer with the goal of achieving production and efficiency gains as well as building consumer confidence in brand Australia and combatting the increasing risk of food fraud.

Discussion:

Because we very much in a digital age, and all work with lots of data, we are also thinking we would like to invite MLA/ISC's security partner to do a session on the importance and details surrounding data security etc etc. There are a number of possible areas they have suggested to speak on and I am keen to get your feedback on which session you would like most. We can always get them to come along next time and present on one of the other areas if a few are popular. Specific topics:

i) Social Engineering
   - What it is
   - Examples (Catch Me if you can, Real world Pen-testing scenarios)
   - Phishing (Email Social Engineering)
   - Sample Phishing Sites / Email
   - Real or Phish?
   - Spear Phishing
   - Protecting yourself
   - If you are not sure just ask
   - DEMO PSHISHING

ii) Multi Factor Authentication
   - What it is
   - How does it work
   - How to use it
   - Why you should use it everywhere
   - Best Practices

iii) Personal Identifiable Information and Data Security
   - Company Data Classification Policy (if there is)
   - General Data / Business Data / Customer Data
   - Don't copy data to other systems
   - Don't turn off data protections
   - If you find something you shouldn't have access to. Please report it!

7.2.2 Supply Chain & Digital Value Chain Officer workshop (1st & 2nd December 2020)

Integrity Systems
red meat customer assurance

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Supply Chain & Digital Value Chain Officer Workshop

Teleconference

Day 1: Tuesday 1st December 2020 1:00pm to 5:00pm – ZOOM
Day 2: Wednesday 2nd December 2020 9:00am to 12:15pm – ZOOM

Program: Capability building
Sub Program: Innovation capability building
Product Group: Capability building (industry)
Core activity: Investment in digital value or supply chain officers to assist companies to develop a whole-of-value chain digital strategy that leverages the best solutions and ensures they are well positioned for new and evolving digital enablers.

This meeting will run under the Chatham House Rule

Supply Chains:	Michelle Henry – Gundagai Meat Processors Matt Martin – Wingham Beef Exports (NH Foods) Aimee Bolton – Oakey Beef Exports (NH Foods) Maria Crawford – Coles Suvir Salins – Coles RROA Jordan McIntyre – Coles RROA Matthew Zorzetto – JBS Harry Evans – Stanbroke Ashley Gunnis – Australian Country Choice Chris Lutton – Australian Country Choice Nikki Gilder – Greenham Jhodie Farrelly – Greenham Chamara Fernando – Pardoo Madison Campbell – Kilcoy Global Foods
MLA & ISC Staff:	Demi Lollback – NLRS Market Reporting Manager MLA Dean Gutzke – Program Manager - Future Feedback Systems ISC Irene Sobotta – Research, Development and Adoption Program Manager ISC Julie Petty – Project Manager - Digital Supply Chains ISC Verity Suttor – Project Manager - Future Feedback Systems ISC Naomi Leahy – Project Manager - Supply Chain Data ISC Vereena Rooney – Manager - Market Insights MLA Stephen Bignell – Manager - Market Information MLA Eloise Fogarty – Data Analyst ISC Luc McCann – Project Manager - Digital and Data ISC
Guests:	Wayne Pitchford – University of Adelaide/ALMTech Sean Miller – University of Adelaide/ALMTech Peter McGilchrist – University of New England/ALMTech Owen Keates – Hitachi Vantara (*ALMTech - Advanced Livestock Measurement Technologies*)
Apologies:	Richard Apps – Program Manager - Objective Measurement MLA/ALMTech Joel Bentley – Australian Country Choice

Version: Monday 30th November 2020

Item	Time	Day 1 – Tuesday 1 December 2020	Responsible
		Teleconference *Join Zoom Meeting* https://zoom.us/j/91667917911?pwd=bUMxWDBSY3h3RnlrQFd6OjlTTjZHZz09	ALL
1.	1:00 – 1:15 (15 mins)	**Meeting start – Welcome and introductions** (time to sort out any IT issues before we commence)	Demi
2.	1:15 – 1:30 (15 mins)	**Data custodians** Our integrity systems are built on data, but just how much?	Irene
3.	1:30 – 2:00 (30 mins)	**How can our integrity systems be improved?** ISC is undertaking work to make sure the foundations are strong with an eye to future needs and functions to support industry stakeholders.	Julie
4.	2:00 – 2:30 (30 mins)	**Future Feedback Reports – The new LDL** ISC and the LDL Team is currently looking at what feedback systems of the future need to provide for industry. To achieve this the team is undertaking sprints with industry participants to identify how the value of industry data can be maximised	Naomi & Eloise
	2:30 PM	**Break (15 mins)**	
5.	2:45 – 3:15 (30 mins)	**Market Update** A look at herd & flock numbers and the current forecast	Stephen
6.	3:15 – 3:45 (30 mins)	**Consumer Insights Update** Plus, what impact has COVID-19 had on the red meat industry	Vereena
7.	3:45 – 5:00 (75 mins)	**Group WIP (Work in Progress) 5 minutes/person** • What are you working on? • What are your challenges? • Do you need resources or assistance with anything?	ALL
	5:00pm	**Finish for the day**	

Item	Time	Day 2 – Wednesday 2 December 2020	Responsible
		Teleconference *Join Zoom Meeting* https://zoom.us/j/91301305829?pwd=eE52RjhoY2IwdzRWTHpET2ImYlBJUT09	
8.	9:00 – 9:10 (10 min)	**Debrief of Day 1 –** (time to sort out any IT issues before we commence)	ALL
9.	9:10 – 9:45 (35 min)	**Industry Data Platform** MLA has developed the Industry Data Platform. The data platform allows us to leverage our data in ways we haven't been able to in the past, including linking, cleaning and producing quality datasets for analysis, in addition to providing access to external datasets e.g. climate, soils etc.	Eloise & Luc
10.	9:45 – 10:15 (30 min)	**Carcase Optimisation Progress** ALMTech has been developing tools to assist processors to evaluate the opportunities and benefits of more accurate and precise measurement of carcase yield and quality. For lamb, we have developed prototype Carcase Optimisation Tool that is able to allocate 'the right carcase to the right cut' and compare the profitability of cutting plans. Similar work is about to commence with beef. ALMTech will provide an update on progress made since this group last met in May and discuss opportunities for direct collaboration.	Wayne & Sean
	10:15 AM	**Break (15 min)**	
11.	10:30 - 11:30 (30 min)	**Hitachi** How *Next Generation Supply Chain Control Towers* can drive value in the Beef Supply Chain	Owen
12.	11:30 - 11:45 (15 min)	**Wingham Beef Exports** Matt has developed specific extension material for WBE suppliers as part of his project, and will share some of the key documents	Matt M.
13.	11:45 - 12:15 (30 mins)	**Final group discussion** *Please note – a Survey Monkey link will be sent out to all participants post workshop. Please provide your feedback and comments so we continually improve the topics and content provided at workshops.*	ALL

Activities for 2021

- **January**
  - Monday 18th – Introduction to ALMTech webinar
- **February**
  - Tuesday 9th – MLA innovation insights right across the value chain webinar
- **March**
  - TBA - Dark cutting in feedlot cattle

Media Training

Extension & Adoption Training

7.2.3 MLA Co-Innovation Program (17-18 February 2021)

- **Your progress** - Even though 2020 was a difficult year, you were still progressing. Tell us about what you achieved and hear from others.
- **Future challenges** - Are you facing the same challenges as others in your sector? How can you work together to address them?
- **Your needs** - How can MLA help you to keep progressing

Time	Wednesday 17 February 2021 Activity	Time	Thursday 18 February 2021 Activity
9.00am AEDT	Session 1 Opening and Introduction MLA strategy and investment focus	9.00am AEDT	Session 1 Opening Review of day 1 Small group discussions
10.00am	Session 2 Facilitated Workshop 1	10.00am	Session 2 Workshop 3
11.00am	Session 3 MLA Research presentation 1 **Identifying new markets – Alternative uses for hides**	11.00am	Session 3 MLA Research presentation 4 **Managing shelf life and enhancing consumer trust**
12.00pm	Break	12.00pm	Break
1.00pm	Session 4 MLA Research presentation 2 **Advanced x ray imaging update and value proposition moving to VBM and automation**	1.00pm	Session 4 MLA Research presentation 5 **Carbon Neutral 2030**
2.00pm	Session 5 Facilitated workshop 2	2.00pm	Session 5 Workshop 4
3.00pm	Session 6 MLA Research presentation 3 **Environmental credentials for red meat**	3.00pm	Session 6 Wrap up and action planning

7.2.4 Steering group Meeting on 20/01/21 & 01/02/21

Day One Thursday 3rd June 9.00 - 12.00 Noon		
8.45am -9.00am	**Co-Innovation Manager Introductions**	Note: the meeting starts at 9.00am sharp.
Session One 9.00- 9.20am	**Garry McAlister MLA - The Co-Innovation Program into the Future**	Updates to the Co-Innovation program based on feedback from the Network review
Session Two 9.20am-9.50am with questions	**Guest presenter Joel Bentley ACC - 'Leading from Behind' to change behaviour**	Influencing and leading change at ACC's network of farms to capture and use data
Break 10 minutes		
Session Three 10.00-10.55am	**Hargraves Institute** **Workshop** **Collaboration Touchpoints** Your role is an innovation broker… You have to define problems, the research required and the potential solutions by working with your leadership and operations teams other organisations, researchers and MLA. How can you be most effective?	**Interactive presentation** on the role of the Co-Innovation manager, the challenges and collaboration. **Breakout activity:** Your collaboration touchpoints Who do you collaborate with? What about? How do you collaborate? What can you do better? **Group debrief:** What can you do better?
10.55 -11.00am	**Garry McAlister**	**Summary Day 1**

MLA-ISC and Stanbroke Steering group met to discuss the future of the program and the planning steps that needed to take place to get there. Below are the agreed action items from the February meeting.

1. MLA to invite Stanbroke to participate in a MLA category growth drivers / priority canvas workshop to help identify gaps aligned to you strategy prior to developing a Co-Innovation Mark II project proposal – Date TBC.
2. Any Co-Innovation Mark II proposal will clearly need to demonstrate how it supports the VBM and Digital projects to determine if / how the business can capture additional value e.g. through communicating sustainability credential through brands and further value adding capabilities etc.

Day Two Wednesday 9th June 2.00 - 4.00pm		
1.45pm -2.00pm	**Co-Innovation Manager Introductions**	Note: the meeting starts at 2.00pm sharp.
Session One 2.00pm - 2.20pm	**Garry McAlister MLA - An update on MLA's priority programs**	MLA's priority programs and opportunities for the Co-Innovation Network to engage.
Session Two 2.20pm – 2.50pm	**Madison Campbell KGF - 'The Hub' Changing how Kilcoy Global Foods interacts with customers and partners**	Innovating how KGF engages with suppliers and customers to build demand for their products.
Break 10 minutes		
Session Three 3.00pm – 3.55pm	**Hargraves Institute** **Making change happen in your business** Your role is a catalyst for change and innovation in the company. It requires a mix of: People skills - Change Management Strategic skills - Scaling	**Interactive presentation** about the concepts **Breakout activity:** Group interviews to discuss implementing change in your organization. **Group debrief:** Report back: what I've learnt about making change happen from the interview
3.55pm – 4.00pm	**Garry McAlister**	**Summary Day 2 / Survey**

7.3 Independent third-party evaluation of co-funded Stanbroke's Digital Supply Chain strategy: Case study

[Source: Evaluation of the Integrity Systems Company Co-Funded resources program (Project V.ISC.1933)].

Role Type: Digital Supply Chain Officer

Incumbent Name: Harry Evans from 26 April 2019 to present.

(Previously Jack Luxford, who completed milestones 1-3 before leaving the company for personal reasons, from November 2018 to 24 April 2019.)

Agreement Commencement and Completion Dates: 21 November 2018 – 1 October 2021

Employment Terms: Three years full time

Role Location: Veradilla, Lockyer Valley, Queensland

7.3.1 Overview of Partner Organisation

Stanbroke Pty Ltd is a family-owned, vertically integrated beef production enterprise that is reviewing and evaluating options to integrate their data capture and analytical capabilities aligned with their data transfer needs.

Stanbroke owns seven cattle stations in the gulf region in northern Queensland. It also manages properties in the Darling Downs to background cattle for the feedlot. Their operations include a 30,000-head feedlot and an adjoining property that produces crops used in feedlot rations. Stanbroke's processing plant is located in the Lockyer Valley, west of Brisbane.

Currently, Stanbroke exports grain and grass-fed beef to over 35 countries.

7.3.2 Stated Purpose of Role

To develop and deliver data management and analytics solutions and build on current capabilities in data capture, management and analysis to allow Stanbroke to define various processes, technologies and required metrics for optimal running of meat and livestock value chains and best practice levels.

To develop and implement Stanbroke's digital strategy, and be responsible for the management and implementation of all digital initiatives undertaken over the initial three years. This project will bring new data streams and significantly increase its impact across the business.

The overall objective of this project is to develop a digital strategy and evaluate the feasibility and commercial options of data capture, management and analytics across the businesses. The primary goal is to provide support in the form a dedicated Digital Officer resource to deliver data capture and analytics processes to allow the Australian meat and livestock Industry to define the various processes and required metrics for running red meat value adding production facilities through to the (domestic and export) customers.

7.3.3 Overview of Role Achievements

The role has had a substantial positive impact on developing capability and implementing an effective digital strategy at Stanbroke.

Effective connectivity across an integrated supply chain is fundamental to that strategy, and major improvements in connectivity are a key achievement of the role. Productivity gains and greater collaboration between business segments are already being realised by providing each element of the chain with access to digital information, communication and resources. Synthesising raw data into concise and easy to understand formats is another important element of that success.

There are enormous improvements in on-farm data collection largely driven by close engagement with the digital supply chain manager, who uses a process of explaining the 'why' and 'how' to staff, rather than just the 'what'. Staff engagement in the use of data to make decisions has resulted in improved data integrity, while also improving staff retention.

The role has actively supported adoption of new digital technologies by working face-to-face with staff, whenever possible, on the practice changes required to benefit them, animal production and business performance.