Final report

ACC Digital value chain strategy development and Digital Officer (Processing / Factory Operations)

Project code: P.PSH.1223

Prepared by: Lewis Habraken
Australian Country Choice

Date published: 8 May 2023

PUBLISHED BY
Meat & Livestock Australia Limited
PO Box 1961
NORTH SYDNEY NSW 2059

This is an MLA Donor Company funded project.

Meat & Livestock Australia acknowledges the matching funds provided by the Australian Government to support the research and development detailed in this publication.

Abstract

This project supported a Co-Innovation Manager at Australian Country Choice (ACC) to drive the development and alignment of the Processing/Factory data strategy with that of the Farm/ Feedlot and Marketing strategies to build end-to-end data capability at ACC. End to end visibility has been achieved with some limitations with further work to be done to incorporate non-ACC bred cattle into the system.

Specific outcomes of the project include:

- Reduced boning room manning through better presentation and analysis of boning room staffing levels.
- Provided visibility of reworked cartons to identify areas where rework is most commonly occurring to allow the operation management team to review and meet specifications first time more frequently.
- Improvement in management of operational efficiency through identification of late loadouts and missed delivered in full on time (DIFOT) to improve customer satisfaction.
- Reduced aged offal stocks.
- Introduced trend reporting on boning room yields to better understand room performance, particularly after major upgrades.
- Reduction in the incidence of dark cutting.

Executive summary

Background

The major activities undertaken by the full-time Digital Officer (Processing Operations) included:

- Facilitate the development of a comprehensive ACC Digital Strategy across the key business areas with a specific focus on the Processing operations.
- Assist in developing and monitoring key performance indicators (triple bottom line) 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.
- Assess the financial viability of innovation projects and their subsequent outcomes to assist in determining implementation.
- Participate in MLA's capability-building modules and network meetings.
- External relationship management as appropriate.
- Prepare regular project reports and quarterly innovation reports.

Objectives

Primary Production (Slaughter & Bone)

- Develop Daily/weekly production trends by key criteria reporting for Slaughter Floor and Boning Room.
- Develop Profitability reporting.
- Develop Rework reporting and analysis.
- Integrate timesheet data into data models for implementation of Manning reporting.
- Develop Rework reporting and analysis.
- Develop Throughput and Yield reporting to analyse revenue gain/opportunities.
- Develop stock reporting to better identify ageing stock.
- Develop chemical lean reporting to identify trim giveaway opportunities and where yield uplift can occur.
- Improve reporting of carcase quality and meat quality traits to guide decision making pick up unfavourable trends earlier.
- Develop metric reporting on animal health (offal room condemns) to better pick up trends both internal to plant and external.
- Develop packaging charge breakdown reporting and analysis by customer.
- Develop Packaging usage reporting and analysis.
- Trialling the use of MSA / OM technology and building reporting tools to provide feedback while assisting technology providers with data feedback.

Further Processing (Value Add)

- Integrate timesheet data into data models for implementation of Manning reporting.
- Develop DIFOT (Delivered in Full and On Time) reporting and analysis.
- Develop Rework reporting and analysis.
- Develop Daily/weekly production trends by key criteria reporting.
- Develop Throughput and Yield reporting to analyse revenue gain/loss.
- Ensure that ACC data capture, transfer, integration, and reporting functions are adopted and used across the ACC Processing team.
- Develop Repairs & Maintenance reporting and analysis.
- Implement a dedicated communications plan to deliver up to four processing case studies. These will be shot as 2-3-minute videos to support the final report.
- Develop Packaging usage reporting and analysis.

Methodology

The methodology for all objectives was generally consistent with a clear plan – act – review approach. This typically involved the following steps.

- Engaging with business users to define the problem and brainstorm potential solutions. Business users predominantly included production managers, supervisors and maintenance managers.
- Once a potential path and solution is agreed upon, discuss with potentially impacted stakeholders and obtain buy-in from other parties. Given the nature of these objectives this was commonly IT teams to ensure our systems were collecting and storing the appropriate information.
- Create a basic version of the solution to present back to the business users. Adjust as required with feedback.
- Develop final solution to the objective based on feedback and share with business.
- Regularly communicate results on an ongoing basis to ensure uptake of tools with business users.

Results/key findings

Outlined in the abstract and in the report.

Benefits to industry

This project demonstrates that developing end-to-end data capture and reporting systems can identify opportunities for improvement along the supply chain. Improving cost control within red meat businesses through utilising operational data to understand where unnecessary costs exist.

Future research and recommendations

In the future ACC plan to implement a hot carcase grading system to streamline production. The ultimate goal is to optimise the drivers of performance through the supply chain to ensure business sustainability and to deliver customers with high-quality, consistent product every time.

Table of contents

1. Background

The primary focus of the Digital Officer role is the implementation of the agreed ACC/MLA Digital Strategy across the ACC business with a specific focus on the Processing operations.

The major activities to be undertaken by the full-time Digital Officer (Processing Operations) include:

- Facilitate the development of a comprehensive ACC Digital Strategy across the key business areas with a specific focus on the Processing operations.
- Assist in developing and monitoring key performance indicators (triple bottom line) 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.
- Assess the financial viability of innovation projects and their subsequent outcomes to assist in determining implementation.
- Participate in MLA's capability-building modules and network meetings.
- External relationship management as appropriate.
- Prepare regular project reports and quarterly innovation reports.

2. Objectives

This project supports the alignment of the Processing /Factory data strategy with that of the Farm/ Feedlot and Marketing strategy to build end-to-end data capability at ACC. The project seeks to trial and where relevant and achievable implement the following initiatives:

Primary Production (Slaughter & Bone)

• Develop Daily/weekly production trends by key criteria reporting for Slaughter Floor and Boning Room.	Completed Milestone 8
• Develop Profitability reporting	Completed Milestone 8
• Develop Rework reporting and analysis	Completed milestone 9
• Integrate timesheet data into data models for implementation of Manning reporting	Completed Milestone 9
• Develop Rework reporting and analysis	Completed milestone 9
• Develop Throughput and Yield reporting to analyse revenue gain/opportunities	Completed milestone 10
• Develop stock reporting to better identify ageing stock	Completed milestone 10
• Develop chemical lean reporting to identify trim giveaway opportunities and where yield uplift can occur	Completed Milestone 11
• Improve reporting of carcase quality and meat quality traits to guide decision making pick up unfavourable trends earlier	Completed Milestone 12
• Develop metric reporting on animal health (offal room condemns) to better pick up trends both internal to plant and external	Completed Milestone 12

• Develop packaging charge breakdown reporting and analysis by customer	Completed Milestone 12
• Develop Packaging usage reporting and analysis	Completed milestones 12/13
• Trialling the use of MSA / OM technology and building reporting tools to provide feedback while assisting technology providers with data feedback.	Completed milestone 13

Further Processing (Value Add)

• Integrate timesheet data into data models for implementation of Manning reporting	Completed Milestone 8
• Develop DIFOT (Delivered in Full and On Time) reporting and analysis	Completed Milestone 9
• Develop Rework reporting and analysis	Completed milestone 9
• Develop Daily/weekly production trends by key criteria reporting	Completed milestone 10
• Develop Throughput and Yield reporting to analyse revenue gain/loss	Completed milestone 10
• Ensure that ACC data capture, transfer, integration, and reporting functions are adopted and used across the ACC Processing team.	Completed Milestone 11
• Develop Repairs & Maintenance reporting and analysis	Completed milestone 12
• Implement a dedicated communications plan to deliver up to four processing case studies. These will be shot as 2-3-minute videos to support the final report.	Completed milestone 13
• Develop Packaging usage reporting and analysis	Completed milestone 13

3. Methodology

The methodology for all objectives was generally consistent. This involved the following steps.

1. Engaging with business users to define the problem and brainstorm potential solutions. Business users predominantly included production managers, supervisors and maintenance managers.
2. Once a potential path and solution is agreed upon, discuss with potentially impacted stakeholders and obtain buy-in from other parties. Given the nature of these objectives this was commonly IT teams to ensure our systems were collecting and storing the appropriate information.
3. Create a basic version of the solution to present back to the business users. Adjust as required with feedback.
4. Develop final solution to the objective based on feedback and share with business.
5. Regularly communicate results on an ongoing basis to ensure uptake of tools with business users.

4. Results

4.1 Primary Processing

4.1.1 Daily/weekly production trends by key criteria reporting for Slaughter Floor and Boning Room.

Scoping, development, testing, and deployment of slaughter and boning production report. Boning room detail includes:

- Overall throughput
- Chiller shrink
- Line throughput
- Head and cold weight trends

Slaughter floor detail includes:

- Overall throughput
- Condemned bodies
- Non-halal bodies
- Non-halal trends
- Head and hot weight trends

Used as a management and operational tool to improve efficiencies and better understand operations.

4.1.2 Develop Profitability reporting

Integration of production data (across both slaughter floor and boning room) with financial data to provide an instant snapshot of the breakdown of customer profitability each day including:

- Fee revenue
- Other revenue
- Offal credits and forecast revenue, adjusted for various offal types
- Meal and tallow credits and forecast revenue
- Hide credits and forecast revenue

Used as a management tool to better understand key revenue drivers and profitability.

4.1.3 Integrate timesheet data into data models for implementation of Manning reporting

This allowed the business to review labour usage on a near-live basis and trend over time to identify the most effective labour combinations. Overall this allowed us to materially reduce boning room mannings.

4.1.4 Develop Rework reporting and analysis

Provided visibility of reworked cartons and provided analysis to identify areas where rework is most commonly occurring and allow the operation to meet specifications first time more frequently.

4.1.5 Develop Throughput and Yield reporting to analyse revenue gain/opportunities

Introduced trend reporting on boning and offal room yields to better understand room performance, particularly after major upgrades.

The trending of offal room yields was particularly helpful in quantifying the value of offal collection over time and justify capital expenditure for a new piece of equipment to increase yields on tendons.

4.1.6 Develop stock reporting to better identify ageing stock

Reduced aged offal stocks significantly.

4.1.7 Develop chemical lean reporting to identify trim giveaway opportunities and where yield uplift can occur

Overall average CL value packed for our largest customer improved materially.

Given the new trim management system was a significant investment for the business, this reporting allowed us to quantify the benefits and provide evidence to both ACC and our customers on the improvements resulting from the capital expenditure.

4.1.8 Develop packaging charge breakdown reporting and analysis by customer

Allowing us to better track packaging usage, identify products which may have excessively thick or thin bags and issues where we have claims on products and how the packaging may have impacted this. The quantifiable benefits of this will have more noticeable benefits longer term.

4.1.9 Develop metric reporting on animal health (offal room condemns) to better pick up trends both internal to plant and external

This allowed us to identify trends in offal condemns to provide feedback through our own supply chain, customers supply chains and operators on the line where the condemns are the result of our own actions.

An example of this where ACC feedlots changed treatment regimes for respiratory conditions we were able to see the effectiveness in lung condemns.

4.1.10 Utilising business intelligence tools improved reporting of carcase quality and meat quality traits to guide decision making pick up unfavourable trends earlier

Assisted in identifying causes of dark cutting occurrence.

4.1.11 Trialling the use of MSA / OM technology and building reporting tools to provide feedback while assisting technology providers with data feedback.

Constructing reporting tools to provide feedback to OM technology providers on the developmental technology.

4.2 Further Processing

4.2.1 Integrate timesheet data into data models for implementation of Manning reporting Develop Profitability reporting

Scoping, development, testing, and deployment of further processing operational manning reporting. The report includes a customer-by-customer breakdown of kg and trays per hour and per person per hour, with benchmark targets set. The report utilised by the production team as a tool to determine which products are most efficient and where learnings from some products can be translated to other products.

4.2.2 Improvement in management of efficiency

Identification of late loadouts and missed DIFOT to improve customer satisfaction.

4.2.3 Improve uptake of BI tools within managers and supervisors in the Further Processing department

Actively engaging with managers and supervisors to improve uptake of tools and consequently the benefits that follow on.

4.2.4 Develop Packaging usage reporting and analysis

The packaging usage report developed for further processing and previously primary processing allows the ACC procurement teams to better forecast and manage stocks of packaging which ultimately results in more efficient inventory and lower amounts of redundant packaging (often plastic) which must be disposed of.

5. Conclusion

5.1 Key findings

- Once the key infrastructure was developed, making incremental changes and constructing reports with large benefits to the organisation and industry was much more straightforward.
- The most challenging aspect of the project was getting business users, who are often less familiar with digital tools and more sceptical of data onboard and understanding what the results meant for the operation. The most effective way forward here was to get them in-front of the tools as often as possible in early stages and be receptive of feedback.
- Getting the infrastructure set-up right initially is critical. There were a number of objectives we were unable to complete due to limitations in the organisations infrastructure. It is hopefully that some of these projects will be able to be completed in future stages.
- While not all changes at the factory level of ACC will necessarily improve the bottom line and viability of the processing operation, there are significant benefits to upstream operators which help improve the position of the red meat industry as a whole. ACC is in a unique position here

in that we can see the benefits of improving our data collection and capability at the factory level on our feedlots, breeding and backgrounding properties.

5.2 Benefits to industry

- Improving cost control within red meat businesses through utilising operational data to understand where unnecessary costs exist. This is in contrast to the traditional accounting approach of looking at a profit and loss statement and comparing to a budgeted figure which may just be what the industry has always done.
- Identification and quantifying of additional revenue opportunities. Digital tools and harnessing the businesses historical data allow businesses to quickly identify the opportunities it may not already be undertaking. This is particularly important given the rapid changes we see in global markets today.
- Providing better rationales to support capital expenditure decisions within an organisation. Historically many decisions may have been made based on 'this is what everyone else is doing' or 'this is what we've always done'. The capture of data and use of forecasting tools allows us to challenge those beliefs, particularly around capital expenditure and make more targeted decisions.
- The use of digital tools at the factory level provides benefits to the industry as a whole with feedback provided on animal health and carcase traits provided upstream improving breeding decisions, antibiotic treatments and feeding regimes. The outcome of this is improved carcase weights, yields, health and consequently revenue at the producer level.

6. Future research and recommendations

- While this project started to provide some feedback upstream, there's considerably more work to be done in this space for more timely, targeted and reliable information to be provided upstream.
- The impending commercial use of OM carcase technologies provides opportunity to integrate a new data point into our sets and analyse how these technologies can add value for processors, exporters and producers.
- The data sets developed across numerous areas of the business as part of this project will assist tremendously in future decision making in the business. While this has already been shown in the project (as per section 4.1.5), there are many more opportunities for ACC and the industry to make more data driven decisions.