

Final report

Enhance business process management solution to support objective measurement of quality, yield and animal health disease status

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Abstract

This project aimed to develop a Decision Support System (Meat Logic) on a modular, scalable, and supportable platform to capture value from existing information sources used during carcass processing, Objective Carcass Measurement (OCM), and Animal Disease and Defect information in lamb and beef processing.

Meat Logic builds on the outputs of the Advanced Livestock Measurement Technologies project (ALMTech 1 & 2), which enabled the development of the Lamb Value Calculator, the lamb carcass optimisation tool, and an integrated production planning and yield reconciliation tool (Meat Logic proof of concept).

Collaboration with a lamb supply chain enabled the demonstration of the Meat Logic platform to provide information to improve supply chain efficiencies and profitability, and to further refine the platform through ongoing feedback from the processor.

The project successfully delivered a modular web-based platform that integrates production planning, yield reconciliation, labour allocation, costing, objective measurement of carcass weight, yield, eating quality, carcass disease and defects, carcass optimisation informed by machine learning using real-time cut yield, carcass and cut traceability, and reporting functions into a single operational intelligence system.

Implementation within a commercial processing environment demonstrated significant benefits through improved reporting accuracy, enhanced operational visibility, reduced reliance on spreadsheets and manual processes, and greater support for data-driven decision making. The platform established a foundation for future integration of objective carcass measurement, animal health and traceability information to support value-based marketing, supply chain optimisation and improved processor profitability.

Future development should focus on staged industry deployment and validation, coupled with continued investment in beef modules, machine learning, objective carcass measurement integration, traceability and predictive analytics.

Commercial implementation will occur through a modular deployment model that enables processors to progressively adopt functionality according to business needs, reducing implementation risk while delivering incremental improvements in profitability, operational efficiency and supply chain performance.

Executive summary

Background

This project was undertaken to develop the Meat Logic Decision Support System and Carcass Optimisation platform to enable red meat processors to better utilise production, yield, Objective Carcass Measurement (OCM), animal health and operational data, including carcass hook tracking, for improved business decision-making. The project further developed the outcomes of the Advanced Livestock Technologies Measurement project (ALMTech 1 & 2), namely the Lamb Value Calculator, Carcass Optimisation Tool, and a proof-of-concept version of Meat Logic, to integrate them into a single, commercially ready decision-making tool for the red meat processing sector.

The development of Meat Logic addressed a fundamental weakness in red meat processing, where the use of spreadsheets has limited the capacity of processors to make carcass selection, sortation and fabrication decisions that are informed by individual carcass attributes, such as weight, yield, eating quality, and carcass defects. An integrated digital decision-support tool, Meat Logic has developed the capability to improve production planning, profitability, traceability and operational efficiency within meat processing businesses.

The project results will be used to support commercial deployment of Meat Logic, improve processor decision-making, facilitate value-based marketing, enhance supply chain efficiency and provide a foundation for wider industry adoption.

Objectives

The project aimed to:

- Develop a scalable and supportable Meat Logic Decision Support System and Carcass Optimisation platform.
- Integrate processor information, OCM data, animal health and defect information into a unified decision-support environment.
- Demonstrate improvements in business decision-making, operational performance and management of key business drivers.
- Demonstrate how integrated information systems can improve supply chain efficiency and profitability.

All major project objectives were achieved, with the Meat Logic platform successfully developed, tested and deployed within a commercial processing environment. The project also demonstrated measurable business benefits and established a pathway for broader commercialisation and industry adoption.

Methodology

The project adopted a staged development and implementation approach involving system design, software development, testing and commercial deployment. Modules were progressively developed to support production planning, yield reconciliation, revenue tracking, labour management, carcass-

to-carton traceability, bill of materials costing, optimiser functions, animal health monitoring, OCM integration and reverse grid profitability analysis. Continuous testing, validation and refinement were undertaken in collaboration with a commercial processing partner to ensure operational relevance and usability.

Results/key findings

The project successfully delivered a fully operational Meat Logic platform capable of integrating production, labour, costing, yield, traceability and profitability data into a single business intelligence system. Implementation within the pilot processing plant reduced administrative effort associated with production planning, reporting and reconciliation by more than 90%, while improving reporting accuracy, operational transparency and commercial decision-making. The platform also established a robust foundation for future predictive analytics, machine learning and production optimisation applications.

Benefits to industry

The project demonstrated that integrated decision-support systems can significantly improve processor productivity, profitability and business resilience. Benefits include improved production planning, enhanced yield and margin visibility, more accurate labour and cost management, improved carcass traceability, stronger product assurance and better-informed commercial decisions. The platform also supports future value-based marketing systems and more efficient supply chain coordination.

Future research and recommendations

Future development should focus on expanding predictive analytics, machine learning, production forecasting, yield forecasting and scenario modelling capabilities within Meat Logic. Additional work is recommended to further integrate OCM technologies, animal health information and livestock traceability systems across supply chains, enabling more advanced optimisation, value-based marketing and processor-producer feedback systems. Broader commercial deployment and evaluation across multiple processing businesses is also recommended to accelerate industry adoption and quantify industry-wide benefits.

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1. Project background and scope

1.1 Background

The profitability of lamb beef processors depends on extracting maximum value from each carcass whilst satisfying customer specifications for yield and eating quality for a large array of possible cut options, input costs implications, and market opportunities. The complexity of deciding how each carcass is best utilised and how best to plan, monitor, manage and report the production process (production planning) while accounting for operational constraints and costs is a significant challenge to the efficiency and profitability of Australian red meat processors. These challenges are exacerbated in a climate of shortages and retention of experienced personnel in senior on-floor and middle management personnel.

The Advanced Livestock Measurement Technologies (ALMTech) program facilitated the development of several Objective Carcass Measurement (OCM) technologies, including the MiS (Microwave) and decision support tools (Meat Logic - production planning and optimisation), offering processors the ability to translate data derived from objective measurement of carcass traits into improved business decisions to capture the additional value of more precise objective carcass measurements.

A proof-of-concept (POC) production planning system (Meat Logic) has been developed, integrated, and used in a commercial processing environment as a tool to assist in the delivery of commercial production planning and reporting services. The POC has successfully demonstrated its value in integrating, analysing and reporting information daily from various business areas (production, sales, Human Resources). From this process and feedback from other processors, a need has been identified to further develop the Decision Support Systems (Meat Logic and Carcass Optimisation) on a scalable and supportable platform to enable capturing value from Objective Carcass Measurement (OCM) and Animal Disease and Defect information in lamb and beef processing.

This project will develop further the suite of Meat Logic modules that were initially developed as part of the Advanced Livestock Measurement Technologies (ALMTech) program. Meat Logic facilitates production planning and optimisation of processing to extract maximum value from carcasses. As it includes all costs and revenue, it can also underpin value-based marketing using carcass yield, eating quality and animal health data.

1.2 Project scope

This project aims to develop the Decision Support Systems (Meat Logic and Carcass Optimisation) on a modular basis on a scalable and supportable platform to enable capturing value from: existing information sources; Objective Carcass Measurement (OCM), and Animal Disease and Defect information in lamb and beef processing. A supply chain pilot will enable the demonstration of the potential of decision support tools (carcass optimisation and production planning – Meat Logic) to facilitate information for improving supply chain efficiencies and profitability. The expected outcome will be to provide learnings that can be incorporated into the wider red meat industry.

2. Objectives

The overall objective is to develop further the suite of Meat Logic modules that facilitate production planning and optimisation of processing to extract maximum value from carcasses. As it includes all

costs and revenue, it can also underpin value-based marketing using carcass yield, eating quality and animal health data.

The specific objectives include:

- a) To develop the Decision Support Systems (Meat Logic and Carcass Optimisation) on a modular basis on a scalable and supportable platform to enable capturing value from: existing information sources; Objective Carcass Measurement (OCM); and Animal Disease and Defect information in lamb and beef processing.
- b) Develop an interface for the integration of processor information to support the accurate and timely provision to enable effective monitoring and data-driven business decisions.
- c) Demonstrate the potential of decision support tools (carcass optimisation and production planning – Meat Logic) to improve business decisions, operational practices, and management of key business drivers (e.g. Gross Margin)
- d) Demonstrate the potential of decision support tools (carcass optimisation and production planning – Meat Logic) to facilitate information for improving supply chain efficiencies and profitability.
- e) To provide learnings that can be incorporated into the wider red meat industry.

3. Methodology

The specific modules that will be developed include:

Production planning and reconciliation

1. Yield as weight and piece count. Provides daily reports on boning room output relative to carcasses available. Appropriate benchmarking should account for chain speed and aim for high performance and not average days. The immediate benefit of this module is that companies are able to develop sophisticated cut weight predictions based on their own infrastructure and labour. In future, we can build in machine learning components later.
2. Production revenue. Based on company-supplied prices for each cut plus trim, it then utilises the yield data to calculate a total revenue.
3. Labour. Based on the time required for a production day, the number of staff doing each task, and the cost of each position type (company-supplied), daily labour costs are reported. Alongside the revenue, this gets closer to reporting on the boning room profit.
4. Carcass to carton. This is a very complicated module with significant coding requirements. Tracking carcasses to cartons enables the company's cut-based revenue to be reported. It also provides more accurate traceability, which underpins animal health reporting and monitoring, as well as providing customer confidence in Australian systems. Note that there is significant new background IP that Dale is providing in this module.
5. Bill of materials. This accounts for all the additional packaging and employee costs of producing specific products.
6. Mutton. As most lamb plants also process mutton, this extends the reporting capability to mutton with different cut specifications and pricing structure to lamb.

Production management design

7. Offal production. Offal represents significant additional revenue from processing. It doesn't come from the boning room, so it is a separate module, but accounting for yield in terms of

weight and piece, as well as whether it can be used for human consumption or is condemned, is accounted for in the reporting.

8. Slaughter floor. This module accounts for the number and weight of carcasses processed as well as labour costs. It facilitates reporting of boning room profit to be extended back to purchase rather than just putting a fixed value of processing on each carcass.
9. Animal health. This module has two functions. It feeds into the offal production revenue module by capturing health conditions associated with each carcass. Carcasses with animal health defects will not receive offal revenue that offsets processing costs. It can also integrate with the company data management system (e.g. Triton) and could be used to provide feedback to producers.
10. Objective carcass measurement. Devices providing information on yield (e.g. GR fat depth, meat%) and/or quality (e.g. IMF, MSA index) will have the information utilised for carcass quality. It can also feed information into the company data management system (e.g. Triton) and could be used to provide feedback to producers.
11. Optimiser. The optimiser captures information on carcasses and combines this with cut weight predictions, prices and costs (trim loss, labour, BoM) associated with different cutting plans. A) The strategic optimiser analyses past performance and develops cut plans that could be more profitable. B) The tactical optimiser can be applied before a boning day as it allocates carcasses to specified cut plans.
12. Reverse grid. Once cut weights, revenue and costs have been quantified, the profit extracted from each carcass type (function of weight, yield and quality) can be back calculated. This can be used by companies to hone current grids, provide direct value-based payments to producers and/or develop incentives for the supply of under-represented carcass types.
13. Livestock purchase cost. This module captures the individual carcass that was processed in the boning room, the carcass timestamp and captures the carcass purchase cost. The timestamp is extremely important as it allocates the daily wages correctly to the carcass category esp. Lamb vs Mutton.
14. Team allocation. This module allows management to record team setups to benchmark labour cost for the different product specifications based on the products produced between minimum and maximum timestamps. Once this is achieved, then all the pieces are available to allocate costs to a carcass: purchase, slaughter floor labour, slaughter floor bill of materials, slaughter floor fixed cost, and accounting for offal net revenue.

Other species

15. Beef. The principle of describing carcasses in terms of weight, yield and eating quality is consistent across species. The purpose of this module is simply to build in a greater number of primals, cut opportunities and grades of trim which are common to beef enterprises.

4. Results

4.1 Project planning, design and equipment ordered and supplied (Milestone 1)

Project planning, design, and equipment ordered and supplied, including:

- Conduct start-up meeting with project team, MLA and UoA
- Form project steering group
- Trial plans

- Design & integration requirements
- License and commercialisation agreement agreed and executed.

4.1.1 Conduct start-up meeting with project team, MLA, and UoA

A start-up meeting was convened on 20th June 2025 with the following project collaborators & MLA representatives:

- Dr Sean Miller & Dr Wathsala Karunaratne – University of Adelaide
- Dale Flanigan – Meat Data Logic
- Daniel Meehan – Meehan Agribusiness Solutions
- Jack Cook & Dean Gutzke – Meat & Livestock Australia.
- Apologies
 - Wayne Pitchford – University of Adelaide (Project Leader)
 - Michael Bridge - Eyre Consulting

4.1.2 Form project steering group

The composition of the project steering group was confirmed as follows:

Name	Organisation	Role
Prof Wayne Pitchford	University of Adelaide	Project Leader
Dr Sean Miller	University of Adelaide	Project administration
Dr Wathsala Karunaratne	University of Adelaide	Carcass Optimisation lead
Dale Flanigan	Meat Data Logic	Meat Logic lead
Michael Bridge	Eyre Consulting	Software build lead
Daniel Meehan	Meehan Agribusiness	Project Support
Jack Cook	MLA	MLA Project Lead
Dean Gutke	MLA	MLA Program Manager

4.1.3 Design & integration requirements

Phase 1

Task	Activities, Milestones & Deliverables
CAPEX1: Architecture	Milestone: System fully architected. Stage 1 requirements documented. Deliverable: Architecture document.
CAPEX2: Design	Milestone: All Stage 1 screens and use cases authored. Deliverable: Design documentation (Figma and use case model).
CAPEX3: Component Configuration and COT Migration	Milestone: Servers ready. COT migrated to a new server. Deliverable: Interim releases to demo server containing new menu items covering the Stage 1 features identified. Database live (back-end database), basic object APIs available and UI components initialised and “themed” for the look-and-feel of the system.
CAPEX3.1: Production Planning & Rec.	Milestone: Functionality for daily/weekly production planning and automated recommendations. Deliverable: Integrated planning tools in the Alpha Build for testing.
CAPEX3.2: Production Revenue	Milestone: Revenue tracking integrated into dashboard. Deliverable: Revenue module ready for Alpha testing.

CAPEX3.3: Labour Management	Milestone: Tracking for labour hours, costs, and productivity metrics. Deliverable: Labour management module in Alpha Build.
CAPEX3.4: Bill of Materials (BOM)	Milestone: Configurable BOM templates for production reqs. Deliverable: BOM module integrated into Alpha Build for review.
CAPEX3.5: Carcass to Carton	Milestone: Carcass processing to final packaging (carton) stage. Deliverable: Carcass-to-carton tracking module ready for testing.
CAPEX4: Meat Logic Beta Build	Milestone: Application can be given to selected users to try out fully. Deliverable: Near-final release to demo server.
CAPEX5: Meat Logic Stage 1 Release	Milestone: Application is available for general users. Deliverable: Final release to demo server, release to live server.

Phase 2

Task	Activities, Milestones & Deliverables
CAPEX6: Design Iteration	Milestone: All stage 2 screens and use cases authored. Deliverable: Design documentation (Figma and use case model).
CAPEX7.1: Mutton Processing	Milestone: Specific tracking and indicators for mutton production. Deliverable: Mutton production functionality included in Alpha.
CAPEX7.2: Offal Production	Milestone: Offal tracking/separate reporting for by-product yield. Deliverable: Offal production module available in Alpha release.
CAPEX7.3: Slaughter Floor Integration	Milestone: Initial integration of slaughter floor data for traceability. Deliverable: Slaughter data linked to production tracking in Alpha.
CAPEX8: Animal Health	Milestone: Animal health indicator/tracker feature developed. Deliverable: Animal health allocation module ready for testing.
CAPEX9: OCM	Milestone: OCM feature developed, along with relevant config. Deliverable: OCM feature ready for testing.
CAPEX10: Optimiser	Milestone: Carcass Optimiser Tool (COT) capabilities fully integrated and available within Meat Logic platform, rather than side-by-side on the same hosting. Deliverable: COT integrated features available for testing.
CAPEX11: Reverse Engineered Grid	Milestone: Reverse engineered grid feature developed. Deliverable: Reverse engineered grid module ready for testing.
CAPEX12: Team Allocation	Milestone: Team allocation feature developed. Deliverable: Team allocation module ready for testing.
CAPEX13: Beef	Milestone: Specific tracking and indicators for beef production. Deliverable: Beef production functionality included in Alpha.
CAPEX14: Meat Logic Stage 2 Release	Milestone: Stage 3 features are available for general users. Deliverable: Final release to demo server, release to live server.

4.1.4 License and commercialisation agreement agreed and executed

A draft licence and commercialisation agreement has been prepared by MLA in collaboration with the project team (UoA) and shared with the University for review with a view to agreement and execution being achieved during Phase 1 of the project.

4.2 System build and testing base platform (Phase 1 - Milestone 2)

4.2.1 Commission base Meat Logic and optimiser platform

Phase 1

Task	Activities, Milestones & Deliverables	Status
CAPEX1: Architecture	Milestone: System fully architected. Stage 1 requirements documented.	Completed
CAPEX2: Design	Milestone: All Stage 1 screens and use cases authored.	Completed
CAPEX3: Component Configuration and COT Migration	Milestone: Servers ready. COT migrated to a new server. Deliverable: Interim releases to demo server containing new menu items covering the Stage 1 features identified. Database live (back-end database), basic object APIs available and UI components initialised and “themed” for the look-and-feel of the system.	Completed
CAPEX3.1: Production Planning & Rec.	Milestone: Functionality for daily/weekly production planning and automated recommendations. Deliverable: Integrated planning tools in the Alpha Build for testing.	Under construction – makes up part of CAPEX3.5 (Milestone 3)
CAPEX3.2: Production Revenue	Milestone: Revenue tracking integrated into dashboard. Deliverable: Revenue module ready for Alpha testing.	Completed
CAPEX3.3: Labour Management	Milestone: Tracking for labour hours, costs, and productivity metrics. Deliverable: Labour management module in Alpha Build.	Completed
CAPEX3.4: Bill of Materials (BOM)	Milestone: Configurable BOM templates for production requirements. Deliverable: BOM module integrated into Alpha Build for review.	Completed
CAPEX3.5: Carcass to Carton	Milestone: Carcass processing to final packaging (carton) stage. Deliverable: Carcass-to-carton tracking module ready for testing.	Commenced – component of CAPEX 3.1 (Milestone 3)
CAPEX4: Meat Logic Beta Build	Milestone: Application can be given to selected users to try out fully. Deliverable: Near-final release to demo server.	Moved to early Phase 2 to accommodate CAPEX 7.1, 7.3 & 12 development (see below)
CAPEX5: Meat Logic Stage 1 Release	Milestone: Application is available for general users. Deliverable: Final release to demo server, release to live server.	Moved to early Phase 2 to accommodate CAPEX 7.1, 7.3 & 12 development (see below)

To improve sequencing of the build prior to initial release (Capex 4 / 5), several elements from the Phase 2 build (Milestone 3) were brought forward to Phase 1, as indicated below. This sequencing will enable greater functionality for the user at the point of release (anticipated on or before 31/10/25).

Task	Activities, Milestones & Deliverables	
CAPEX7.1: Mutton Processing	Milestone: Specific tracking and indicators for mutton production. Deliverable: Mutton production functionality included in Alpha.	85% Complete
CAPEX7.3: Slaughter Floor Integration	Milestone: Initial integration of slaughter floor data for traceability. Deliverable: Slaughter data linked to production tracking in Alpha.	Completed
CAPEX12: Team Allocation	Milestone: Team allocation feature developed. Deliverable: Team allocation module ready for testing.	Completed

Phases 2 & 3 (revised)

To reflect the resequencing of activities that occurred for Phase 1, Phase 2 & 3 actions are updated below.

Task	Activities, Milestones & Deliverables
CAPEX4: Meat Logic Beta Build	Milestone: Application can be given to selected users to try out fully. Deliverable: Near-final release to demo server.
CAPEX5: Meat Logic Stage 1 Release	Milestone: Application is available for general users. Deliverable: Final release to demo server, release to live server.
CAPEX6: Design Iteration	Milestone: All stage 2 screens and use cases authored.
CAPEX7.2: Offal Production	Milestone: Offal tracking/separate reporting for by-product yield. Deliverable: Offal production module available in Alpha release.
CAPEX8: Animal Health	Milestone: Animal health indicator/tracker feature developed. Deliverable: Animal health allocation module ready for testing.
CAPEX9: OCM	Milestone: OCM feature developed, along with relevant config. Deliverable: OCM feature ready for testing.
CAPEX10: Optimiser	Milestone: Carcass Optimiser Tool (COT) capabilities fully integrated and available within Meat Logic platform, rather than side-by-side on the same hosting. Deliverable: COT integrated features available for testing.
CAPEX11: Reverse Engineered Grid	Milestone: Reverse engineered grid feature developed. Deliverable: Reverse engineered grid module ready for testing.
CAPEX13: Beef	Milestone: Specific tracking and indicators for beef production. Deliverable: Beef production functionality included in Alpha.
CAPEX14: Meat Logic Stage 2 Release	Milestone: Stage 3 features are available for general users. Deliverable: Final release to demo server, release to live server.

Screenshots of key data visualisations provided include:

- Slaughter floor carcass processing screen, recording and reporting
- Boning Room carcass usage screen for recording and reporting
- Total plant carton production and revenue screen, Recording and reporting
- Product codes and references
- Labour allocation, record and report labour cost
- Bill of Materials (BOM):
 - BOM - record and report, applies correct value of packing to each product code
 - Input screen to create packaging items
 - Product Builder, record and report, applies each of the different types of packing to each product code to generate actual packaging cost for each product
 - Input screen to create new BOMs
 - Filter views of existing BOMs to show detail breakdown of packaging items for each
 - Product Builder, record and report, showing the total number of packaging units used and cost



Fig. 1. Meat Logic login screen

4.2.2 Testing

An extensive in-house testing and validation program has run in parallel with the Phase 1 development. Led by Dale Flanagan, all coding outputs, data visualisations, and analytical outputs generated by Meat Logic (web version) have been cross-checked with source code and functionality. This has included the use of benchmark data to ensure that the values and representations depicted by Meat Logic (web version) translate to exactly the same outcomes in the source developmental model (based on Excel & Google Sheets).

4.2.3 Dedicated operatives trained

To develop the commercial Meat Logic tool, an Australian lamb processor was engaged to scope, test and validate the tool throughout its development and subsequent deployment in-plant. This has been an invaluable step to develop and launch Meat Logic. In preparation for the engagement of the processor as the first user of Meat Logic (web), an onsite staff member was trained to use the developmental model to assist daily production planning and reconciliation in real time. This allowed our team to incorporate early user feedback into the refinement of Meat Logic (web) and prepare the processor to transition to the web tool soon after the Beta model (Phase 2 - Capex 5) is released and validated by our team. Additional training will be delivered during Phases 2 & 3.

4.3 Production planning and reconciliation module (Phase 2 - Milestone 3)

The following activities were carried over from Phase 1 for completion in Phase 2 (current milestone reporting period)

Task	Activities, Milestones & Deliverables	Status
CAPEX3.1: Production Planning & Rec.	Milestone: Functionality for daily/weekly production planning and automated recommendations. Deliverable: Integrated planning tools in the Alpha Build for testing.	Completed
CAPEX3.5: Carcass to Carton	Milestone: Carcass processing to final packaging (carton) stage. Deliverable: Carcass-to-carton tracking module ready for testing.	Completed
CAPEX4: Meat Logic Beta Build	Milestone: Application can be given to selected users to try out fully. Deliverable: Near-final release to demo server.	Completed
CAPEX5: Meat Logic Stage 1 Release	Milestone: Application is available for general users. Deliverable: Final release to demo server, release to live server.	Completed

In addition to these activities, the following activities have been completed in this milestone reporting period.

Deliverables	Progress	Comments
PHASE 2: Milestone 3 - Development on Production planning and reconciliation module		
Yield as weight and piece count	Completed	
Production Revenue	Completed	Designed and implemented full Cost & Revenue Centre module. Backend: services, DTOs, interfaces, and average/breakdown data logic. Frontend: store, services, components using shared modular styling. Integrated boning room, slaughter floor, and offal room wage, BOM, fixed, and revenue costs. Added CSV export and reporting integration.
Labour	Completed	Fully developed and released.
Carcass to carton tracking	Completed	Fully developed and released.

Bill of materials	Completed	Fully developed and released, waiting for the client to supply updated data.
Other specifications including mutton	Completed	Fixed lamb and mutton carcass allocation logic to ensure correct mapping and classification. Corrected carcass pool availability logic across mapped and non-mapped groups. Implemented grade updates from L1–L3 to L6 and added M1–M6 grades. Completed mutton processing CAPEX logic via cost and revenue centre integration. Refined wage/kg calculations using cutting spec, boneless flag, group, and stock class. Implemented stock class support in production plans, enabling per-class daily production.
Meat Logic Beta: Testing & validation (1400 head/day, min. 1 day)	Completed	Iterated user interface and user experience across multiple modules based on stakeholder and processor feedback.
Meat Logic Release: Application available for general users	Completed	Released and in use by the production team. Boning room dashboard, yields etc. Client is getting ready for the deployment of production planning, training and slight operational changes.
Testing & validation (1400 head/day, min 1 week)	Completed	See above.

Phases 3 (remaining tasks)

The following activities are tasked for delivery in Phase 3 (Milestone 4).

Offal production	Commenced	Implemented offal cost calculations within Kill Floor CCS dashboard. Integrated offal wage, fixed, and revenue costs into Cost & Revenue Centre. Removed obsolete BOM employee references related to boning room. Prepared groundwork for offal production as the next feature following slaughter floor completion.
Slaughter floor	Completed	Implemented slaughter floor wage/CCS, BOM/CCS, and fixed cost/CCS calculations. Connected slaughter floor data to CCS Data & Pricing and Cost & Revenue Centre. Improved CSV import performance by ~60%. Added cost recalculation workflow triggered after imports, including modal prompts. Fixed predicted vs actual yield calculations to source directly from carcass allocation. Corrected KPI formulas for averages vs totals across slaughter floor metrics. Implemented Kill Floor CCS validations and improved error reporting.
Optimiser	Design integration started	Commenced COT design iteration and general user interface refinements
Animal health disease	Not started	Dependent on carcass track development; framework is to be established.

Objective measurement	Not started	dependent on available OCM technologies, Nothing in the current pipeline. Framework to be established.
Alternative (Reverse) grid	Not started	
Livestock purchase cost	Complete (see note)	Data is supplied via the client's core system. However, build grid pricing module would be preferred for the ML platform.
Resource team allocation	Completed	Customised function added, now can add multiple of the same labour classification with different pay rates.
Testing & validation (1400 head/day, min 1 week)	Not started	

Screenshots of key data visualisations are provided include:

- Secure login
- Fixed costs dashboard
- Cost and Revenue Centre Report
- Cost and Revenue Centre output
- Labour Allocation

Three animated sequences demonstrating a small range of the operating environments within Meat Logic also accompany this report:

- Boningroomkpi.gif
- Costandrevenueareport.gif
- Productionview (1).mp4

4.3.1 Testing & Validation

The core Meat Logic build has been released for in-plant testing by the processor. Use of the application is being monitored at least weekly, with feedback provided by the processor being fed iteratively into an update and model refinement process to ensure the system performs to the function and specification required by the end user. The core platform has been in use by the processor since early January 2026.

4.3.2 Feedback

The following feedback has been provided by the processor during testing and validation:

- The Boning Room Dashboard flows well and is very easy to navigate, which has made it straightforward for the team to begin working with the platform.
- Additional visualisations within the Boning Room Dashboard requested, particularly for heavy mutton products, including:
 - Total Yield
 - Labour Cost per Carcass
 - Labour Cost per Kilogram
- The *Team allocation to Products* functionality is of high value.
- Processor's staff have advised that the system is:
 - easy to use,
 - flexible,
 - adapts well to their workflow, and
 - aligned with how the boning room operates day to day.
- Some additional reports will likely be required as the team continues to adopt the system.

- The *Production Planning* module is expected to be fully utilised in the coming weeks.
- Future development of a carcass and production forecasting model would be a valuable addition to further assist with planning.
- Overall, the processor is very supportive, and the team are looking forward to continuing to work with the platform as the next features are introduced

As a consequence of using Meat Logic during the testing and validation stage, the processor has noted a level of variability in their daily yield outcomes not previously observed. Our analysis indicates a substantial proportion of this variability is linked to a higher proportion of fat score 4–5+ carcasses processed at specific times through the trial period, which are almost certainly influencing the yield results. This level of granularity in monitoring boning room yield has not previously been available to the processor and introduces the opportunity for a range of innovations and interventions to add further value to their processing operations, including adopting accurate yield measurement devices (e.g. MiS for GR measurement), carcass sortation, and carcass to cut optimisation based on the objective measurement of carcass fat and weight (i.e. yield) in the future.

4.4 Production planning and reconciliation module (Phase 3 - Milestone 4)

The following activities were carried over from Phase 2 for completion in Phase 2 (current milestone reporting period).

Task	Activities, Milestones & Deliverables	Status
Offal production	Completed	Implemented offal cost calculations within Kill Floor CCS dashboard. Integrated offal wage, fixed, and revenue costs into Cost & Revenue Centre. Removed obsolete BOM employee references related to boning room. Prepared groundwork for offal production as the next feature following slaughter floor completion.
Optimiser	Significant progress achieved	First iteration deployed; pending the processor-aligned model from Wathsala and follow-up regression / training work.
Animal health disease	Completed	Carcass Hook RFID, NLIS RFID and PIC Number added to CCS Data & Pricing.
Objective measurement	Completed	Final OCM Fat / IMF / Animal Health columns added to the Killfloor CCS dashboard.
Alternative (Reverse) grid	Completed	Profitability, traceability, server-side filtering, break-even calculator and product cost integration delivered.
Resource team allocation	Completed	Pack specification field and additional cost tracking delivered earlier in the project and in use.
Testing & validation (1400 head/day, min 1 week)	Completed	Meat Logic core functions and progressive releases providing access to new features has been utilised by the processor throughout this reporting period.

Summary of Milestone 4 Progress

During this reporting period the team delivered:

- Completion of the Reverse Grid carcass profitability functionality, including server-side filtering, break-even analysis and full product cost integration.
- First end-to-end iteration of the COT Optimiser integration, including Azure deployment, advanced optimization modal and readiness warnings.
- A new licensing system for the processor's instance with countdown, warning and expired states, plus copyright footer across the platform.
- Completion of the OCM and Animal Health deliverables via new dashboard and module columns.
- Bilingual (lamb / beef) terminology support and a new dedicated beef instance hosted in Azure.
- Audit logging, authentication hardening, and a range of performance, charting and filtering improvements across the platform.
- An ability to monitor the performance of the carcass hook tracking system (via carcass hook RFID) has also been developed and incorporated into a dashboard, and provides linkages with supplier property identification code (PIC) and individual animal electronic identification (NLIS RFID).

Outstanding work primarily concerns the next COT iteration, which is dependent on the processor-aligned optimiser model being completed, and the final shape of the beef instance pending direction from Dale on database structure and component adaptation.

Additional activities commenced

Licensing	Completed	Countdown, warning and expired states implemented; pending sign-off and deployment to the processor.
Hooktrack Performance & Carcass Traceability Reporting	Completed	As an additional, complementary function, an ability to monitor carcass hook track performance has been incorporated to the KillFloor Carcass Processing Data dashboard, and includes linkage with supplier PIC number, NLIS RFID number, and carcass hook RFID.
Beef instance	In progress, refinements to be added within Milestone 4	New Azure App Service live with bilingual support; database split and full feature parity to be confirmed.

Screenshots of key data visualisations are provided in Appendix 7.5 to 7.8. These include:

- Optimiser.
- Reverse Grid.
- Breakeven Calculator.
- Hooktrack Performance Monitor, Carcass Traceability, and Individual Carcass OCM & Animal Health Dashboard.
- Product Price Inputs.

An animated sequence demonstrating a small range of the carcass optimiser operating environment is provided in Appendix 7.9.

4.4.1 Testing & Validation

The core Meat Logic build has continued to be tested 'in-plant' by the processor, with ongoing feedback incorporated into the build process. Use of the application is being monitored at least weekly. The core platform has been in use by the processor since early January 2026.

4.4.2 Feedback

Evaluation and testing of the system continued with the processor during this Milestone 4 reporting period, and refinements have been developed and deployed in line with their requirements.

During this reporting period, Meat Logic has progressed to a product that may be supported through commercial release (in accordance with MLA licensing agreements). Negotiations have commenced with the processor to progress to a supported subscription-based software offering.

4.5 Final Report (Deliverables)

4.5.1 Additional development

In the short period between the delivery of Milestone 4 and the Final Report, the following additional work was undertaken and focused on resolving outstanding defects across the product reference dashboard, traceability modal and Reverse Grid, alongside improvements to the BOM workflow and hook track record exporting, in preparation for Beta build #3.

Completed work

- Product reference dashboard fix – resolved an issue where copying a product produced an unknown error.
- Cut weight in traceability – added cut weight to the traceability modal.
- Traceability totals fix – corrected total revenue and margin in the traceability modal and reverse grid.
- BOM copy options – copying the BOM from the product builder now offers the option to select carcass or carton.
- Hook track record dates – the date is now included in the Hook track record and applied to the PDF generator.
- Reverse Grid initial load – modified the behaviour to pull only a single day on the initial load, improving load times.
- Cut weight formula fix – refactored the whole yield functionality after the cut weight sometimes exceeded the carcass weight.
- Additional yield fixes – made several further corrections to the yield calculations.
- Heatmap decimals – fixed the Reverse Grid heatmap to accept decimal values.
- Pricing alerts – added alerts in the production revenue to show users which products did not have pricing allocated.
- Cost & Revenue Centre – worked extensively through the cost and revenue centre and Reverse Grid.

- Allocation fraction restored – reverted to the previous yield functionality using the allocation fraction.
- Yield allocation breakdown – implemented a breakdown for mapped products. In the traceability model (for mapped products only), a new tab now displays all the products used to allocate a given product – for example, where a FIFO mapping allocates source product 2090 into the target group Breast, the tab shows which products were allocated into that specific Breast group product.
- Export sorting fix – corrected the processor’s hook track so that exports are now sorted ascending by date.
- The Killfloor CCS now includes the offal BOM, which uses all the products from the daily production revenue. Using the area “Offal Room,” it calculates its total BOM and allocates that amount evenly across all carcasses for the relevant date.

Margin heatmaps (new feature)

A new Margin Heatmaps feature was added, providing a weight × fat score grid analysis based on margin and cost. Users can create as many heatmaps as they want to better analyse the data from the Reverse Grid.

- Each cell shows the average margin per carcass for that weight range and fat score combination.
- Colour coding – green indicates profitable cells and red indicates a loss, allowing rapid visual identification of profitable carcass profiles.

Machine learning

A machine learning model has been tested to predict the weight and yield of cuts using data generated daily from real-time processing, and this function has been applied within Meat Logic. This adds further accuracy to Meat Logic outputs (production, reconciliation and optimisation), as the platform uses actual production data each day to inform daily processing outcomes.

Further opportunities to use machine learning have been identified but not developed in this project. They include predicting the demand and supply of animals, and real-time optimisation integrated with stock data, combined with product demand and supply forecasts.

Summary of Final Report Deliverable Status

The table below summarises the status of the milestone deliverables as at the end of the reporting period. The key deliverable for May was Beta build #3 and its release to the server.

Function	Status	Notes
Beta build #3 & server release	Complete	Build deployed to the server, incorporating the fixes and features below.
Margin Heatmaps	Complete	New weight × fat score grid analysis on margin and cost, with unlimited user-defined heatmaps and profit/loss colour coding. Decimal support added.
Yield functionality	Complete	Yield refactored to resolve cut weight exceeding carcass weight; allocation fraction model restored.
Yield allocation breakdown	Complete	New traceability tab for mapped products showing the products used to allocate each mapped product.
Offal BOM	Complete	Added to the Killfloor CCS, allocating the Offal Room total BOM evenly across carcasses for the date.
Traceability & Reverse Grid fixes	Complete	Cut weight added; total revenue and margin corrected; single-day initial load implemented.
Hook track record	Complete	Date included and applied to the PDF generator; processor export now sorted ascending by date.
Optimiser / ML yield model	Significant progress achieved	Ongoing teamwork; a methodology to use a machine learning model for yields under development. This is additional work outside of the project scope and may be the basis of a future funding application.

4.5.2 Confidential report of activity work plan completed, modular web-based form of decision support systems finalised and interface for processor information integration.

Production Planning and Reporting Before Meat Logic

In 2024, the processor's production planning and reporting processes relied heavily on spreadsheets, manually maintained business rules, and information sourced from multiple disconnected operational systems.

Production planning required significant manual effort to collect information from various sources, reconcile production results, review production performance, assess expected yields, and determine production requirements for the following day. There was no centralised platform capable of integrating production, labour, costing, yield, and operational reporting information into a single source of truth. As a result, operational reporting and production planning were highly dependent on spreadsheet knowledge, manual intervention, and the availability of key personnel.

The planning process generally involved:

- Reviewing sales orders.
- Assessing available production capacity.

- Analysing production outputs.

A major challenge was that final customer orders were often not confirmed until late in the afternoon or evening. Consequently, production planning activities were commonly performed after normal business hours to ensure management had an accurate production plan available for the following day. The process was labour-intensive and relied heavily on manual spreadsheet calculations, manual reconciliation, and extensive validation of information obtained from multiple sources.

The primary objective of Meat Logic was to eliminate these inefficiencies by creating a centralised operational platform that automated reporting, streamlined production planning, improved data visibility, and reduced organisational reliance on spreadsheets and individual knowledge holders.

Development of the Meat Logic Prototype

The development of the Meat Logic prototype was an extremely time-intensive exercise undertaken while simultaneously delivering production planning support and reporting services to the processor.

Unlike traditional software implementation, the platform was developed from the ground up within the Google ecosystem. Google Apps Script, JavaScript, HTML interfaces, Firebase databases, reporting frameworks, business logic, and operational workflows were all developed concurrently while continuing to support day-to-day business operations.

At project commencement, operational data was dispersed across numerous spreadsheets and independent systems, creating significant disconnects between production data, labour information, carton production, product costing, yield reporting, and financial analysis.

A substantial amount of development effort was dedicated to creating the logical framework required to integrate these previously disconnected data sources into a structured and reliable reporting environment.

One of the most significant technical challenges involved developing methodologies capable of accurately linking case-level production information to carton-level production outputs.

This required the creation of custom algorithms and business rules capable of generating:

- Yield reporting.
- Product recovery benchmarks.
- Labour efficiency reporting.
- Production performance analysis.
- Product profitability reporting.
- Carcass utilisation analysis.
- Future forecasting capability frameworks.
- Production planning models.

The project required the development of custom coding and reporting methodologies that transformed raw production data into meaningful operational intelligence.

The development process extended well beyond software development. Considerable effort was invested in creating reconciliation methodologies, validation frameworks, exception reporting systems, and business rules capable of managing real-world production environments.

Yield Reconciliation and Product Costing Framework

One of the most critical objectives of the Meat Logic project was the development of a consistent and reliable yield reconciliation framework.

Before the implementation of Meat Logic, yield information was often generated from multiple sources and methodologies, resulting in inconsistencies that could impact production reporting, product costing, business planning activities, and commercial decision-making.

For a meat processing business, yield accuracy is fundamental to understanding the true value of a carcass and the profitability of individual products.

A substantial amount of development effort was invested in creating a structured methodology capable of consistently linking carcass inputs to carton production outputs.

The objective was to ensure that yield calculations were generated using a consistent methodology regardless of production volume, operator, product mix, or reporting period.

This provided several key business benefits:

- Consistent yield reporting across the business.
- Reliable benchmarking of production performance.
- Improved visibility of product recovery.
- Improved carcass utilisation analysis.
- Reduced manual intervention and spreadsheet manipulation.
- Increased confidence in operational reporting.
- Improved support for future planning activities.

Importantly, the yield reconciliation framework became a critical source of information for the sales department.

By maintaining accurate and consistently reconciled yields, the sales team had access to up-to-date product recovery information that could be relied upon when making commercial decisions, including:

- Product pricing.
- Customer quotations.
- Margin analysis.
- Product profitability assessments.
- Production planning decisions.
- Internal forecasting and planning activities.
- Livestock purchasing evaluations.

The framework also became a key input into product costing tools, ensuring that product costs were based on actual operational performance rather than historical assumptions or manually maintained spreadsheet calculations.

While Meat Logic did not generate forecasting reports as part of the fee-for-service arrangement, the platform provided consistent and reliable yield information that could be utilised by the processor within its own forecasting and planning processes.

Data Quality Challenges and Rework Requirements

A significant portion of the project involved overcoming data quality issues within source systems and operational reporting processes.

Production, labour, carton, and operational data frequently contained inconsistencies, missing records, coding errors, duplicate transactions, formatting issues, and reporting anomalies that prevented immediate use for business intelligence, yield analysis, production planning, and costing purposes.

As a result, substantial rework was often required before meaningful reporting, benchmarking, yield analysis, or production planning could be performed.

Examples included:

- Incorrect or inconsistent product coding.
- Missing production records.
- Piece count discrepancies.
- Duplicate transactions.
- Labour allocation inconsistencies.
- Yield calculation anomalies.
- Inconsistent reporting structures.
- Historical data structures not designed for analytical reporting.
- Changes in operational processes impacting reporting logic.

Many development hours were spent investigating, cleansing, validating, restructuring, and reconciling operational data before meaningful reporting could be delivered.

Importantly, many of these challenges were not software-related issues but originated from the quality and structure of the source data itself. Consequently, a considerable amount of project time was devoted to identifying, correcting, and developing solutions capable of managing real-world operational data issues.

To address these challenges, Meat Logic introduced automated controls, including:

- Piece count validation.
- Yield exception reporting.
- Production reconciliation controls.
- Product code validation.
- Missing data alerts.
- Duplicate transaction detection.
- Data integrity monitoring.
- Automated exception reporting.

These controls significantly improved confidence in the data while reducing manual investigation and reconciliation effort.

Over time, Meat Logic evolved from simply reporting on operational outcomes to actively identifying potential data quality issues before they impacted management reporting and decision-making.

Business Intelligence and Advisory Capability

While Meat Logic was developed as an operational management platform, one of its most significant strengths was its ability to provide a foundation for independent business analysis, advisory services, and continuous improvement activities.

The platform was specifically designed to consolidate operational, production, labour, costing, and yield information into a structured and auditable data environment.

This allowed authorised third-party consultants, business analysts, accountants, operational specialists, and management teams to access meaningful business intelligence without requiring extensive manual data collection or spreadsheet manipulation.

Meat Logic enabled independent analysis of:

- Production performance.
- Yield performance.
- Labour efficiency.
- Product profitability.
- Carcass utilisation.
- Operational trends.
- Future planning support.
- Costing and margin performance.
- Continuous improvement opportunities.

The value of Meat Logic was not only the automation of reporting but the creation of a structured operational dataset that could be utilised by management, sales teams, accountants, operational specialists, and third-party advisors to support informed business decision-making.

The structured data framework allowed business advisors and analysts to focus on identifying operational improvements and commercial opportunities rather than spending time collecting, cleansing, validating, and reconciling operational data.

As a result, Meat Logic became significantly more than a reporting platform. It evolved into a business intelligence ecosystem capable of supporting operational reviews, profitability analysis, performance benchmarking, management reporting, strategic planning, and continuous improvement initiatives.

Production Planning support Service Delivery

Throughout the fee-for-service arrangement, production planning support was routinely provided outside standard business hours.

A unique challenge associated with providing production planning support services to the processor was the timing of final sales order confirmations.

In many cases, customer orders and sales requirements were not finalised by the sales department until late in the afternoon or evening. As a result, accurate production planning could not commence until final order requirements had been received and validated.

This created a workflow where production planning activities were generally undertaken after normal business hours to ensure management and production teams had an accurate and achievable production plan available for the following day's operations.

Typical planning activities included:

- Reviewing final sales demand.
- Assessing production requirements.
- Generating recommended production plans.
- Reviewing operational constraints.
- Communicating planning outcomes to management.

Before Meat Logic, much of this work relied on manually gathering and validating information from multiple spreadsheets and business systems.

Production planning support frequently extended into the late evening, particularly during periods of high production volume or changing customer demand.

As Meat Logic matured and automated many of the underlying data collection, validation, and reporting processes, the time required to generate production plans reduced significantly. However, support outside standard business hours remained necessary due to the operational realities of the business and the timing of sales order finalisation.

Prototype Support, Maintenance and Reliability

Due to the prototype nature of the Meat Logic platform, ongoing support and maintenance formed a significant component of the service provided.

The platform incorporated Google Sheets, Google Apps Script, HTML interfaces, JavaScript, Firebase databases, automated integrations, and Looker Studio dashboards.

Unlike a mature commercial software platform, many components were being developed, tested, refined, and deployed while simultaneously supporting live business operations.

As development continued, issues could emerge at any time, including:

- Automated import failures.
- Data integrity exceptions.
- Reporting anomalies.
- Dashboard refresh issues.
- User-related issues.
- Production reconciliation errors.

To minimise operational risk, support was routinely provided Monday through Sunday, both during and outside normal business hours.

Errors could present themselves at any time during the day or night, requiring investigation and corrective action to ensure the platform remained operational.

To support the business, Dale Flanigan maintained a high level of availability throughout the project and routinely made himself available during both business hours and after hours whenever support was required.

Support activities included:

- Monitoring automated integrations.
- Maintaining Firebase databases.
- Troubleshooting reporting issues.
- Managing dashboard performance.
- Supporting operational users.
- Implementing enhancements.
- Resolving production reconciliation discrepancies.
- Investigating data integrity issues.

It was always paramount that KPI dashboards, production plans, yield reports, labour reporting, and operational reporting remained current, accurate, and free from data errors.

The level of support extended well beyond traditional reporting services and included software development, data engineering, systems administration, user support, business analysis, and operational consulting.

As the platform matured, the frequency of issues reduced significantly through the implementation of automated validation routines, exception reporting, reconciliation controls, and data integrity monitoring.

The result was a platform that progressively transitioned from a highly supported prototype into a stable operational system capable of supporting daily business-critical decision-making.

Training and Adoption

A key objective during the development of Meat Logic was to create a platform with an extremely low learning curve that could be readily adopted by operational personnel without requiring advanced technical skills.

Unlike traditional reporting systems that often require specialist knowledge, Meat Logic was designed around existing operational workflows and terminology familiar to production, sales, and management teams.

The objective was not simply to replace spreadsheets but to provide a structured platform that could be easily understood and utilised by operational staff while reducing reliance on individuals with specialised spreadsheet knowledge.

Training activities generally focused on:

- Production planning workflows.
- Dashboard interpretation.
- KPI reporting.
- Yield analysis.
- Data validation processes.
- Mobile and tablet access.
- Operational reporting.
- Production reconciliation processes.

Because the platform was designed around real-world operational requirements, users were generally able to become productive after only a small number of training sessions.

One of the most important outcomes was the reduction in dependency on individual personnel to maintain complex spreadsheets and reporting processes.

Business rules, calculations, reporting methodologies, and operational logic became embedded within the platform itself, creating a more sustainable and supportable operational environment.

Productivity Improvements and Time Savings

Throughout the development phase, the delivery of production planning support services, reporting, reconciliation, troubleshooting, system maintenance, and user support represented a significant daily commitment.

To provide the fee-for-service production planning support function and maintain the Meat Logic prototype, a minimum commitment of approximately four hours per day was typically required.

This included:

- Production planning support activities.

- Data collection and validation.
- Production reconciliation.
- Yield analysis.
- KPI reporting.
- System maintenance and troubleshooting.
- Dashboard monitoring and support.
- User assistance and operational support.
- Investigation and correction of data integrity issues.

A large proportion of this effort was driven by manual processes, spreadsheet dependencies, disconnected systems, and the ongoing maintenance requirements associated with a live prototype environment.

As Meat Logic matured and additional automation, validation routines, reconciliation controls, and reporting functions were introduced, the effort required reduced dramatically.

By completion of the project, processes that had historically required approximately four hours per day could generally be completed in around fifteen minutes.

This represented a reduction in administrative effort of more than 90%.

Importantly, the reduction from approximately four hours per day to fifteen minutes per day was achieved while simultaneously improving data quality, increasing reporting consistency, eliminating spreadsheet dependencies, and providing greater operational visibility than had previously been available.

The time savings were achieved through:

- Elimination of spreadsheet-based production planning.
- Automated data processing.
- Automated yield generation and reconciliation.
- Automated KPI reporting.
- Automated validation and exception reporting.
- Centralised operational data management.
- Reduced manual intervention and investigation.

The result was that management and operational staff gained faster access to accurate information while significantly reducing the administrative burden associated with planning, reporting, and reconciliation activities.

Production Planning Module Capability

As part of the Meat Logic platform, a comprehensive Production Planning Module was designed, developed, commissioned, and successfully implemented.

While the fee-for-service production planning arrangement eventually concluded and the module was not subsequently utilised to its full capability, the system was fully operational and capable of supporting both short-term and long-term production planning requirements.

The Production Planning Module was specifically designed to move beyond traditional spreadsheet-based planning methods by providing a structured and auditable planning environment.

Key capabilities included:

- Daily production planning.

- Multi-day production planning.
- Weekly forward-planning.
- Historical plan archiving.
- Full planning revision history.
- Production plan version control.
- Production status monitoring.
- Mobile and tablet accessibility.
- PDF plan generation and distribution.
- Management visibility of planning activities.

One of the key advantages of the system was its ability to retain a complete planning history.

Unlike spreadsheet-based planning processes, where previous versions could be overwritten or lost, Meat Logic maintained an auditable record of planning decisions, revisions, approvals, and production outcomes.

This capability provided management with the ability to:

- Review historical planning decisions.
- Compare planned versus actual production outcomes.
- Identify recurring production challenges.
- Support continuous improvement initiatives.
- Improve planning consistency.
- Enhance operational accountability.

The system was also designed to allow production plans to be generated days or weeks in advance, providing management with improved visibility of future production requirements and customer demand.

Although the module was not ultimately adopted as the primary planning tool following the conclusion of the fee-for-service arrangement, its successful development and commissioning demonstrated the capability of Meat Logic to support sophisticated production planning functions well beyond traditional spreadsheet-based approaches.

Transition from Fee-for-Service to Internal Business Platform

Throughout the development and implementation period, Meat Logic was used as both an operational management platform and a business intelligence framework that enabled the delivery of detailed business analysis, operational reporting, production planning support, yield reconciliation, and continuous improvement services to the supply chain.

The platform allowed independent analysis of production performance, labour efficiency, yield performance, product profitability, operational trends, costing performance, and business performance indicators using a single, structured source of operational data.

A key objective throughout the project was to ensure that the platform would ultimately become self-sustaining within the business rather than remaining dependent on external support.

As the system matured and operational processes became embedded within the platform, the long-term vision was for the processor to internally champion and manage the system while continuing to benefit from the operational efficiencies, reporting capabilities, and business intelligence that Meat Logic provided.

For this reason, at the conclusion of the fee-for-service period, a subscription-based support model was proposed to the supply chain.

The subscription model was designed to provide:

- Ongoing platform hosting.
- Software maintenance and updates.
- Security patching and system administration.
- User support and training.
- Module enhancements.
- Data integration support.
- Business continuity protection.
- Access to future platform developments.

The intention was not to continue the original fee-for-service arrangement but rather to transition Meat Logic into an internally owned and championed business platform supported through a structured software subscription model.

The transition model reflected the original vision of Meat Logic: providing businesses with a scalable operational platform that embeds business knowledge, automates routine processes, improves data quality, and enables informed decision-making while reducing dependence on spreadsheets, manual processes, and key individuals.

Future Capability Framework

While forecasting services were not delivered as part of the fee-for-service arrangement, Meat Logic was intentionally designed with the framework required to support future forecasting capabilities.

A key design objective of the platform was to create a structured and reliable data environment capable of supporting future analytical and forecasting models once sufficient historical operational data had been accumulated and validated.

The development of consistent yield reconciliation methodologies, production reporting structures, labour analysis frameworks, product costing models, and business intelligence reporting created the foundation required for future capability development.

Examples of future capabilities supported by the platform architecture include:

- Yield forecasting.
- Production forecasting.
- Labour requirement forecasting.
- Margin modelling.
- Scenario modelling.
- Machine learning applications.
- Production optimisation.
- Advanced business intelligence reporting.
- Predictive analytics.

4.5.3 Outline demonstrable benefit delivered from decision support tools to improve business decisions, operational practices and management of key business drivers, and facilitate information for improving supply chain efficiencies and profitability

The implementation of Meat Logic delivered substantial benefits to the processor.

Elimination of Spreadsheet Dependency – Production planning and operational reporting were transitioned from multiple disconnected spreadsheets into a centralised platform. By the conclusion of implementation, production planning was being performed entirely within Meat Logic, eliminating the need for spreadsheet-based production planning processes.

Improved Reporting Accuracy – Automated validation and reconciliation significantly reduced reporting errors and improved confidence in operational information.

Improved Operational Visibility – Management gained access to timely and accurate information relating to production, labour, yields, costs, profitability, and operational performance.

Improved Business Continuity – Business logic, operational knowledge, reconciliation methodologies, and reporting frameworks were embedded within the platform itself, reducing reliance on individual staff members and spreadsheet knowledge.

Improved Commercial Decision-Making – The development of a consistent yield reconciliation framework ensured reliable information was available to support product pricing, costing activities, margin analysis, and business planning.

Significant Efficiency Gains – Administrative effort associated with production planning, reporting, reconciliation, and maintenance activities was reduced by more than 90%.

Improved Data Integrity – Automated validation controls and exception reporting significantly improved confidence in operational reporting and reduced the effort required to identify and correct errors.

4.5.4 Public case study of lessons learnt from development of system and application in pilot plant, including preliminary CBA of system implemented against baseline at pilot plant

- Case Study - Completed (Appendix 7.1).
- Cost-Benefit Analysis – Completed (Appendix 7.2)

4.5.5 Industry demonstration via video or invitation

- A short video that outlines the features and value of the Meat Logic platform for lamb processors has been developed and accompanies this report.
- A promotional brochure has also been prepared (Appendix 7.3).

4.5.6 MLA Communications approval of at least one publication

- To be completed in collaboration with the MLA Communications Team on acceptance of this report.

4.5.7 Review current license agreement with suite of ALMTech tools to include additional Meat Logic and Optimiser capabilities, and execute a commercialisation agreement

- Further refinement to the initial MLA-Adelaide University agreement has been agreed that will support further research and development of the tool by Adelaide University and is proceeding to finalisation (refinement of the agreement relates to the formation of the entity *Adelaide University* following the merger between the *University of Adelaide* and the *University of South Australia*, in January 2026).
- A separate agreement to enable the commercial use of Meat Logic within the red meat supply chains has been negotiated between MLA and JAC Consulting (as the developer). Implementation of this agreement will come into effect upon the establishment of the company that will market, supply, maintain and service Meat Logic (after 1st July 2026).

4.5.8 Workshop with MLA to review findings and receive recommendations for how technology could be rolled out to value chains beyond the pilot plant

- Completed (Agenda attached at Appendix 7.4).

5. Conclusions

The project successfully achieved its primary objective of developing and demonstrating a scalable, modular decision support system capable of integrating production, yield, labour, costing, traceability, animal health and objective carcass measurement information into a single operational intelligence platform. The Meat Logic platform has evolved from a proof-of-concept developed under the ALMTech program into a practical business management tool capable of supporting daily operational decision-making within a commercial processing environment.

The project demonstrated that significant value can be created by integrating existing processor data sources and transforming them into actionable information. Through the development of production planning, yield reconciliation, reverse grid, costing, labour allocation, traceability and reporting modules, Meat Logic has provided processors with a structured framework to better understand the drivers of profitability and operational performance. The platform has also established the foundations required to incorporate objective carcass measurement, eating quality, yield prediction and animal health information into future value-based supply chains.

Implementation within the pilot processing environment demonstrated substantial operational benefits. Administrative effort associated with production planning, reporting and reconciliation activities was reduced by more than 90%, while reporting consistency, data integrity, operational visibility and business continuity were significantly improved. The transition from spreadsheet-based systems to a centralised data environment reduced reliance on key personnel and embedded critical business logic within a sustainable operational platform.

A key outcome of the project was the development of a robust carcass-to-carton reconciliation framework that enables processors to accurately quantify carcass value, product profitability and margin performance. This capability supports more informed livestock procurement, product pricing, production planning and customer servicing decisions. Importantly, it also provides the foundation for future implementation of value-based marketing systems that reward producers based on objectively measured carcass outcomes.

The project also highlighted the importance of data quality, validation and reconciliation in delivering meaningful business intelligence. Much of the development effort was directed towards resolving inconsistencies in source data and establishing automated controls that improve confidence in operational reporting. These learnings will be highly relevant to future digital transformation initiatives across the Australian red meat processing sector.

The successful completion of the project provides a clear pathway for broader industry adoption. The modular architecture enables staged implementation, reducing adoption risk and allowing processors to progressively deploy functionality aligned with their operational priorities. The establishment of commercialisation arrangements and the development of industry communication materials provide a mechanism for wider deployment of the technology across Australian lamb and beef supply chains.

5.1 Key findings

- The Meat Logic platform was successfully developed as a scalable, modular decision-support system capable of integrating production, yield, labour, costing, traceability, Objective Carcase Measurement (OCM) and animal health information into a single business intelligence platform.
- Comprehensive production planning and reconciliation modules were developed, including yield reporting, production revenue analysis, labour management, bill of materials costing, carcass-to-carton traceability and profitability reporting.
- New functionality was successfully implemented, including reverse grid profitability analysis, break-even calculations, livestock traceability through RFID hook tracking, OCM integration and animal health data capture.
- Integration of production, labour, costing and yield information provided management with a complete view of business performance, supporting more informed decisions relating to pricing, product mix, labour utilisation, production scheduling and margin management.
- Administrative effort associated with production planning, reporting and reconciliation was reduced by more than 90%, while simultaneously improving reporting accuracy, data quality and operational transparency.
- Carcass-to-carton traceability capability improved product assurance and reduced the potential cost and impact of product recalls by enabling targeted identification of affected product.
- The project demonstrated that operational data can be transformed into actionable business intelligence, creating a foundation for future predictive analytics, machine learning, forecasting and optimisation tools.
- The pilot implementation confirmed the commercial viability of Meat Logic and its potential for broader deployment across the Australian red meat processing sector.

5.2 Benefits to industry

Practical application of project insights and implications to the red meat industry

- Red meat processors can utilise Meat Logic to integrate production, yield, labour, revenue and traceability information into a single decision-support platform, improving operational visibility and management decision-making.
- The system provides processors with the capability to optimise production plans, improve yield performance, monitor profitability and better manage key business drivers in real time.
- Integration of OCM, animal health and traceability information enables processors to capture greater value from carcasses through improved product allocation, value-based marketing and more precise market targeting.
- Carcass-to-carton traceability functionality strengthens product assurance, supports regulatory compliance and improves customer confidence in Australian red meat supply chains.
- The platform provides a scalable digital foundation for future adoption of advanced analytics, forecasting, optimisation and artificial intelligence applications within processing businesses.

Benefits to the wider red meat industry

- Improved processor profitability and efficiency contribute to a more competitive and sustainable Australian red meat sector.
- Enhanced utilisation of objective measurement technologies increases the value that can be extracted from existing investments in OCM systems and associated data streams.
- Improved traceability and information sharing across supply chains support stronger market access, product integrity and export assurance outcomes.
- The ability to accurately quantify carcass value creates opportunities for more transparent value-based payment systems and improved feedback mechanisms to livestock producers.
- Broader adoption of decision-support systems such as Meat Logic has the potential to improve whole-of-supply-chain productivity, facilitate data-driven decision-making and accelerate digital transformation across the Australian red meat industry.

6. Future research and recommendations

- Support broader commercial deployment of Meat Logic across lamb processing businesses to validate benefits across different processing systems, scales and market environments.
- Prioritise integration of Objective Carcass Measurement (OCM), animal health and traceability data streams to maximise value capture from emerging objective measurement technologies.
- Expand the platform's traceability functionality to support whole-of-supply-chain data integration and facilitate producer feedback, market assurance and value-based marketing systems.
- Undertake additional economic evaluation across multiple processing businesses to quantify the industry-wide benefits associated with improved yield reconciliation, operational efficiency, production planning and labour utilisation.

- Investigate opportunities to integrate Meat Logic with emerging digital livestock traceability, carcass feedback and processor information systems to support a more connected and data-driven red meat supply chain.
- Some additional development of the optimiser module will be completed by the project team. However, there are opportunities for additional industry support to:
 - complete the development of the beef platform, and
 - expand the use of machine learning to forecast the demand and supply of animals, and enable real-time optimisation integrated with stock data, product demand and supply forecasts, and
 - develop advanced analytics, predictive modelling and decision-support capabilities using the structured datasets generated through Meat Logic.

Collectively, the outcomes of this project demonstrate that integrated decision-support systems have the potential to significantly improve processor efficiency, profitability, traceability and supply chain performance, while providing the digital foundation necessary to support future innovations in objective measurement, optimisation and value-based marketing within the Australian red meat industry.

7. Appendices

7.1 Meat Logic Case Study

Meat Logic Transforms Production Planning and Business Intelligence in Lamb Processing

Sheep meat processing businesses operate in a highly dynamic production environment where profitability depends on accurate production planning, yield management, labour efficiency, and timely decision-making.

In this case study, with a sheep and lamb processor managing a weekly throughput of more than 10,000 carcasses, production planning and operational reporting relied heavily on multiple disconnected spreadsheets, manual reconciliation processes, and information sourced from several independent operational systems before Meat Logic was implemented. Critical business functions, including production planning, yield analysis, labour reporting, product costing, and management reporting, were highly dependent on individual knowledge holders and labour-intensive manual processes.

The business required a solution to consolidate operational information into a single source of truth, reduce administrative effort, and improve the quality of business intelligence available to management.

The Challenge

Several key challenges were impacting operational efficiency and decision-making:

- Production planning relied on manually maintained spreadsheets and business rules.
- Operational data existed across multiple disconnected systems.
- Yield reporting was inconsistent and often generated using different methodologies.
- Significant effort was required to reconcile production, labour, and carton data.
- Customer orders were frequently finalised late in the day, requiring after-hours production planning.
- Data quality issues, including coding errors, duplicate records, missing transactions, and inconsistent reporting structures, reduced confidence in reporting outputs.
- Management lacked a centralised platform for analysing profitability, labour efficiency, yield performance, and production outcomes.

These challenges increased operational risk, consumed valuable management time, and limited the organisation's ability to make timely, data-driven decisions.

The Solution

Meat Logic was developed as an integrated operational management and business intelligence platform tailored specifically for red meat processing operations.

Built within the Google ecosystem using Google Apps Script, JavaScript, HTML, Firebase, and Looker Studio technologies, the platform consolidated production, labour, yield, costing, and reporting information into a structured operational framework.

Key capabilities include:

Production Planning

- Daily and multi-day production planning.
- Version control and planning history.
- Mobile and tablet accessibility.
- Production status monitoring.
- Automated plan generation and distribution.
- Optimising individual carcass profit by allocating carcasses to the most profitable cut plans, each day (tactical optimisation).
- Integration of individual objective carcass measurements (weight, yield and meat-eating quality) in the planning process.

Yield Reconciliation

- Carcass-to-carton yield reconciliation.
- Product recovery analysis.
- Product costing support.
- Margin analysis inputs.
- Consistent yield benchmarking.

Business Intelligence

- KPI dashboards.
- Labour efficiency reporting.
- Production performance monitoring.
- Operational trend analysis.
- Strategic optimisation of cutting plans (determining the most profitable cut plan for each carcass type, on a weight x yield x eating quality basis).
- Product profitability analysis.

Data Integrity Controls

- Automated validation routines.
- Duplicate transaction detection.
- Product code validation.
- Missing data alerts.
- Yield exception reporting.
- Production reconciliation controls.
- Monitoring and reporting carcass traceability from lairage to the boning room (PIC, EID and carcass hook RFID).

The platform evolved from a reporting tool into a comprehensive business intelligence ecosystem that supports operational management, strategic planning, and continuous improvement initiatives.

Outcomes and Benefits

Significant Productivity Gains

One of the most measurable outcomes was the dramatic reduction in administrative effort associated with production planning, reporting, reconciliation, and system maintenance.

Activity	Before Meat Logic	After Meat Logic
Daily planning, reporting and reconciliation effort	~4 hours/day	~15 minutes/day

This represents a reduction in administrative effort of more than 90%, allowing management and operational staff to focus on higher-value activities.

Improved Reporting Accuracy

Automated validation, reconciliation controls, and exception reporting significantly improved confidence in operational data. Benefits included:

- Reduced reporting errors.
- Improved data consistency.
- Faster issue identification.
- Greater trust in management reports.
- Improved operational transparency.

Reliable Yield Information

A major achievement of the project was the development of a robust yield reconciliation framework linking carcass inputs to carton outputs. The framework provided:

- Consistent yield calculations.
- Improved product costing accuracy.
- Reliable margin analysis.
- Better livestock purchasing decisions.
- Enhanced production benchmarking.
- Improved pricing and quotation support.

For the first time, sales and management teams had access to current, reconciled yield information that could be confidently used for commercial decision-making.

Enhanced Business Continuity

By embedding business logic, reporting methodologies, and operational workflows within the platform, the business reduced reliance on key individuals and spreadsheet expertise.

Knowledge that previously existed in multiple spreadsheets and with individual staff members became institutionalised within the system.

Better Commercial Decision-Making

The integration of production, labour, costing, and yield information provided management with a complete view of business performance. This enabled more informed decisions relating to:

- Product pricing.
- Margin management.
- Production scheduling.
- Labour utilisation.
- Product mix optimisation.

- Continuous improvement opportunities.

Improved Traceability and Product Assurance

Carcass to carton traceability prevents a large loss of value when processing issues are identified post-production and restricts recall losses to a small range of cartons rather than whole days' production.

Lessons Learned

Several important lessons emerged from the project.

- *Data Quality Must Be Addressed Early* - Many reporting challenges originated from source data quality rather than software limitations. Significant value was generated through the implementation of validation routines, reconciliation controls, and automated exception reporting.
- *Operational Knowledge is Critical* - Successful implementation required a deep understanding of meat processing operations, production workflows, yield dynamics, and business decision-making processes. Technology alone could not solve operational challenges without strong industry expertise.
- *Automation Delivers More Than Efficiency* - While the reduction in administrative effort was substantial, the greatest benefit was the creation of reliable business intelligence that supported better decision-making across the organisation.
- *Future Capability Depends on Strong Foundations* - The structured operational data environment created by Meat Logic now provides the foundation for future capabilities, including:
 - Production forecasting.
 - Yield forecasting.
 - Labour modelling.
 - Scenario planning.
 - Predictive analytics.
 - Machine learning applications.
 - Production optimisation.

Conclusion

Meat Logic successfully transformed the business's production planning and reporting processes from a spreadsheet-dependent environment into a modern business intelligence platform.

The project delivered measurable productivity improvements, improved data quality, enhanced business continuity, and provided management with timely access to reliable operational information. Most importantly, it established a scalable digital foundation that supports future innovation, advanced analytics, and data-driven decision-making across the business.

Key Result: Administrative effort associated with production planning, reporting and reconciliation was reduced by more than 90%, while simultaneously improving reporting accuracy, yield visibility, operational transparency, and commercial decision-making.

7.2 Meat Logic Benefits

1. Assumptions

- Previous effort = 4 hours/day for a supply chain processing 2,500 - 5,000 carcasses per day (Appendix 7.1)
- Current effort = 15 minutes/day (0.25 hours/day)
- Saving = 3.75 hours/day
- 5 days/week
- 50 weeks/year
- Fully loaded labour cost = \$80/hour (planning, reporting and supervisory staff). Costed at \$100,000 p.a., including oncosts (30%) and overtime provisions (20%)

The annual saving becomes:

$$3.75 \times 5 \times 50 \times \$80 = \$75,000/\text{year per position}$$

2. Benefits

Multiple staff members and management oversight; therefore, a realistic processor-wide estimate would be:

Staff Resource	Time Saved	Annual Saving
Production planner	3.75 hrs/day	\$75,000
Reporting/administration officer	3.75 hrs/day	\$75,000
Management review and reconciliation	1 hr/day	\$15,000
Total Labour Saving		\$165,000

Then:

Benefit Category	Annual Benefit (AUD)
Administration and reporting labour savings	\$165,000
Improved management productivity	\$25,000
Improved yield visibility and product mix optimisation	\$50,000
Improved labour utilisation	\$25,000
Reduced data errors and reconciliation effort	\$15,000
Improved traceability and recall risk management	\$20,000
Total Annual Benefits	\$300,000

Incorporation of Carcass Optimisation Benefits

The potential benefit of Meat Logic's fully integrated Carcass Optimisation functionality is considered here in addition to the benefits indicated above.

The value of carcass optimisation will be dependent on the processor being able to:

- Identify individual carcasses at slaughter and track them through the plant on the processing chain (i.e. hook tracking).
- Measure any of, a combination of, or all the traits of carcass weight, carcass yield, and eating quality on an individual carcass basis.

- Sort and batch carcasses into boning groups optimised to daily cut plans using the objectively measured traits (either on entry to, or before exit from chillers).

Based on an in-plant study conducted during the Advanced Livestock Measurement Technologies project over four consecutive processing days (ALMTech, 2022¹), where approximately 10,000 lamb carcasses were allocated to boning plans using the carcass optimiser (optimised on individual carcass weight and DXA carcass yield), the optimised outcomes were, on average, \$1.50 to \$2.00 more profitable per carcass compared to actual boning room profits achieved during the trial.

At the low end of this range, a processor fabricating 10,000 carcasses per week may therefore be able to target an optimisation benefit of \$750,000 to \$1,000,000 per year.

If the requisite sortation ability does not exist onsite, Meat Logic may provide clear business cases to invest in sortation, as well as carcass hook tracking, and objective measurement of yield and eating quality.

¹ Wang, V, Preston, F, Smith, CS, Miller, SM, Flanigan, D, & Meehan, D (2022). A case study in carcase optimisation in a domestic supply chain. *An Advanced livestock measurement technologies for globally competitive Australian meat project*.

7.3 Meat Logic Brochure

● OPERATIONAL INTELLIGENCE • FOR PROCESSORS

Run the floor, not the *spreadsheet.*

Meat Logic is a web-based operational intelligence platform built specifically for red meat processors — by people who have stood on the floor, not in a software showroom.

One connected environment for yield, labour, BOM, planning, revenue and carcass economics. Designed to replace the spreadsheet sprawl that quietly runs most processing businesses today.

BUILT FOR PROCESSORS WHO
still run yield, costing and
packaging out of a workbook
nobody else can open.

11 modules.
Five stages.
One platform.

Smarter Data. / Better Planning. / Stronger Processing Decisions.

MEAT LOGIC

CAPABILITY ML-PROC-2026

§ 02 - THE PROBLEM WE BUILT THIS TO SOLVE

Most processors do not have a data problem.

They have a fragmentation problem.

01

Spreadsheet sprawl

Yield, costing, labour, packaging and planning live in dozens of disconnected workbooks. Each one built by someone different. Each one a single point of failure.

02

Key-person risk

When the person who built the model leaves, the logic, the assumptions and the confidence in the numbers leave with them. The business loses control of its own data.

03

Hidden errors

Reconciliation takes days, not hours. Reports arrive too late to act on. Commercial decisions get made on stale, unverified, and often contradictory data.

OUR ANSWER

One connected platform. *Eleven modules.* Reporting logic the business actually controls.

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PAGE 02

MEAT LOGIC

CAPABILITY ML-PROC-2026

§ 03 - THE PLATFORM

One framework. Eleven modules. *Every decision in one place.*

Meat Logic centralises the operational frameworks processors already rely on — and replaces the disconnected spreadsheets with structured, scalable and auditable workflows. Roll out progressively, module by module.

M.01

Daily Production Planning

Build, approve and distribute plans days in advance. Live links to the floor — tablets, screens, mobile.

M.02

Yield Reconciliation

Carcase-to-carton with variance reporting and production-sequence analysis. Reconciled yield, not averages.

M.03

BOM & Packaging

Maintain BOMs against product codes. Auto-track packaging and consumables against actual output.

M.04

Production Revenue

Track sell prices against output. Compare commercial returns against livestock purchase value.

M.05

Team Allocation

Benchmark labour by specification, skill set and pay class. See the true cost of higher-fab products.

M.06

Carcase Allocation

Link grades to products. Analyse yield, value and revenue recovery across grades and customer programs.

M.07

CCS Data & Pricing

Carcase cost analysis, usage tracking and allocation reporting. Saleable value, grade by grade.

M.08

Product Catalogue

Central library of codes, specs, groupings and yield assumptions. One source of truth.

M.09

Hook Track & Traceability

RFID and EID read-rate analysis, no-read trends, traceability reporting and sequence review.

M.10

KPI Dashboards

Management reporting, operational benchmarking and exception visibility. Supervisor-friendly.

M.11

Forecasting Framework

Embedded foundation for demand, grade availability and yield-based planning models.

FLAGSHIP

Reverse Grid Break-Even

Flagship commercial decision tool. Set a margin objective — Meat Logic tells you what to pay for the livestock.

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PAGE 03

§ 04 - FLAGSHIP CAPABILITY

The Reverse Grid Break-Even Calculator.

Set a target commercial margin. Meat Logic combines livestock cost, grade, weight, yield assumptions, sell prices, kill cost, labour, BOM and fixed costs – and calculates the livestock purchase value required to hit that margin.

This is the conversation procurement, operations and sales have been trying to have for years. It now happens on one screen.

INPUTS COMBINED IN THE MODEL

Livestock cost	Grade & weight	Yield
Sell price	Kill cost	Labour
Fixed cost	BOM	

Reverse Grid · MSA-3

LIVE

CARCASE WEIGHT	284 kg
YIELD ASSUMPTION	71.4%
SELL VALUE	\$2,418
KILL + LABOUR + BOM	\$346
TARGET MARGIN	8.0%

REQUIRED LIVESTOCK \$/KG LWT
\$4.82 /kg lwt

§ 05 - IMPLEMENTATION

A staged rollout. *Not a big-bang risk.*

STAGE 01	STAGE 02	STAGE 03	STAGE 04	STAGE 05
Core Data Setup	Logic & Benchmarking	Planning	Dashboards	Traceability
- Product reference - Carcass import - Carton import - Reconciliation	- CCS & pricing - Team allocation - Yield reconciliation - Reverse Grid - BOM	- Daily planning - Approvals - Floor distribution	- KPI dashboards - Mgmt reporting - Benchmarking	- Hook Track - EID/RFID - Historical recon

MEAT LOGIC

CAPABILITY ML-PROC-2026

“

Built by people with *practical processing experience*. Not by software vendors who have never seen a kill chain.

THE MEAT LOGIC DESIGN PRINCIPLE

THE CORE TEAM

DF Dale Flanigan
CO-FOUNDER

ZB Zac Bailey
CO-FOUNDER

WP Wayne Pitchford
CO-FOUNDER

§ 06 · NEXT STEP

Request a scoped *pricing proposal* for your operation.

Pricing is structured around the modules and stages relevant to your business — not a list price you would not trust anyway. A 20-minute call is enough to scope a fixed-price discovery and put a real number in front of you.

REQUEST PRICING

WHAT TO EXPECT

20-minute scoping call.
Fixed-price discovery.
Platform that pays back.

GET IN TOUCH

E. meat.data.logic@gmail.com
P. 0418 570 588

BOOK A WALKTHROUGH

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PAGE 05

7.4 MLA Workshop Agenda, Wed 10th June 2026

Participants

MLA

Jack Cook
David Packer
Lachlan Jeffers
Dean Gutzke

Adelaide University

Wayne Pitchford
Sean Miller
Wathsala Karunaratne

Project Partners

Dale Flanigan – Meat Data Logic
Zac Bailey – JAC Consulting
Luis Mercado – JAC Consulting
Danny Meehan – Meehan Agribusiness Solutions

Scope

- to review findings, and
- receive recommendations for how technology could be rolled out to value chains beyond the pilot plant.

Running Order

1. Introduction of workshop participants
2. Introduction to the project
 - a. Background to the development (ALMTech Program 5)
 - b. Opportunity to enable processors to obtain value from OCM measurement in predicting & reconciling outcomes from individual carcasses (tracked from property to the boning room)
 - c. MDC project scope
3. Meat Logic 'helicopter' video
4. Meat Logic deeper dive by modules
Use this as an opportunity to add "what we valued / how it has changed operations, etc." comments based on the processor's feedback during development.

Modules to Report on

- a. Base Meat Logic & Optimiser platform
- b. Yield as weight and piece count
- c. Production Revenue
- d. Labour
- e. Carcass to carton tracking
- f. Bill of materials
- g. Other specifications, including mutton
- h. Offal production
- i. Slaughter floor
- j. Animal health disease
- k. Optimiser
- l. Objective measurement
- m. Alternative (Reverse) grid
- n. Livestock purchase cost
- o. Resource team allocation
- p. Beef – not a contracted deliverable, but mentioned in the Activity Work Plan

7.5 Reverse Grid

ALMTECH

Production Management

Search Anything

Analytics

Boning Room KPI

Cost and Revenue Centre

Predicted Vs Actual

Team Cost

Product Line Cost

Yield Summary

Carcass Allocation

TQM Hook Track Report

Reverse Grid

Settings

Support

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Logout

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Your licence expires in 22 days. Contact us to renew. meat.data.logic@gmail.com

Home / Analytics / Reverse Grid

30/04/2026 → 30/04/2026 Clear

Reverse Grid

Per - carcass revenue, cost, and margin analysis across all products

Export

TOTAL REVENUE

\$6537153.80

1220 carcasses

PROCESSING COST

\$87857.06

Wage, fixed, slaughter BOM, carton BOM, labour

TOTAL MARGIN

\$6073593.04

Avg: 91.8%

Break-Even Calculator

Stock Class LAMB

Group

Fat Score: 2 5

Wt: Min Max

Apply

Reverse Grid

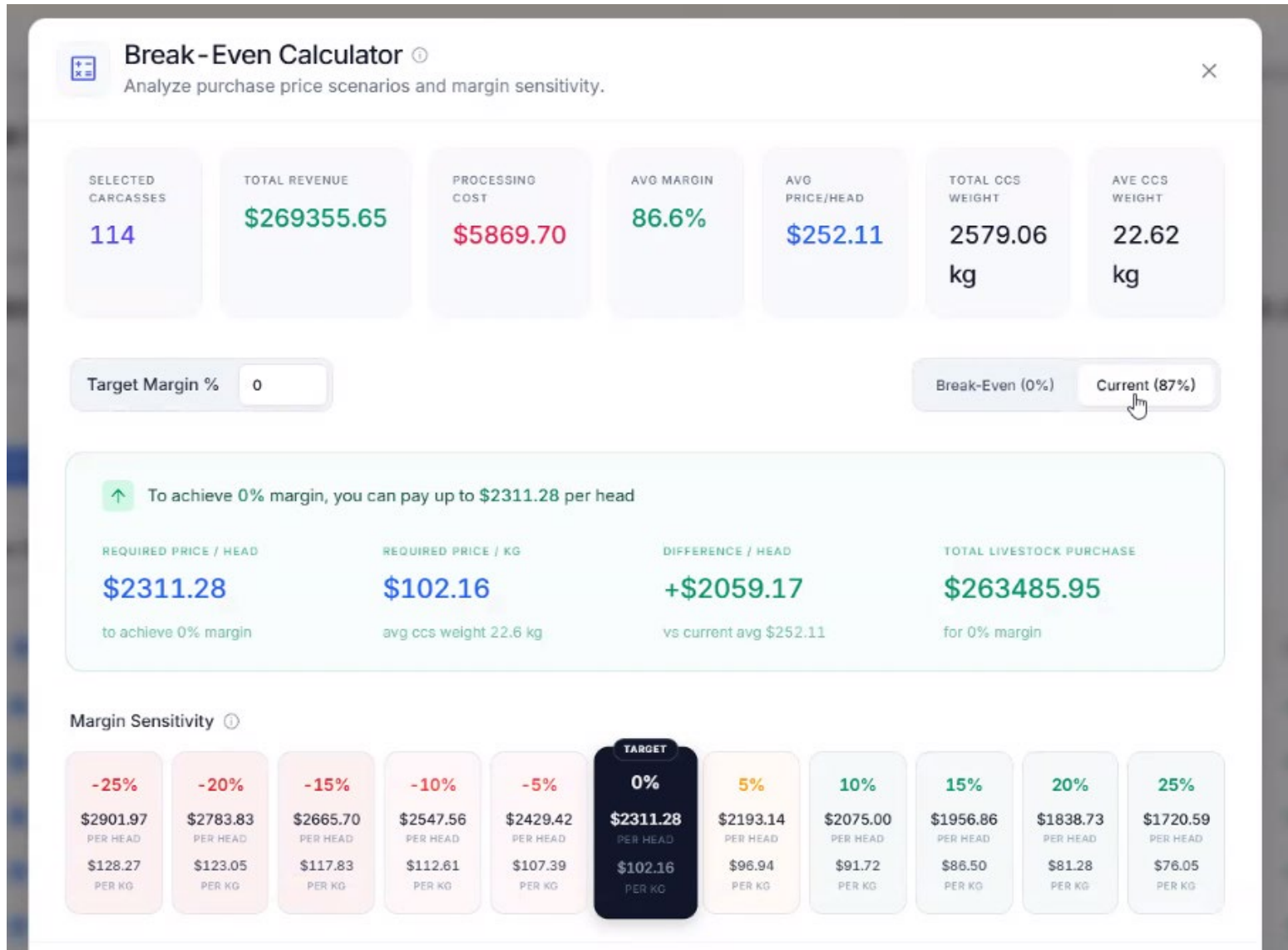
Per - carcass revenue and cost breakdown with product drill-down

Search by carcass Barcode or stock cla...

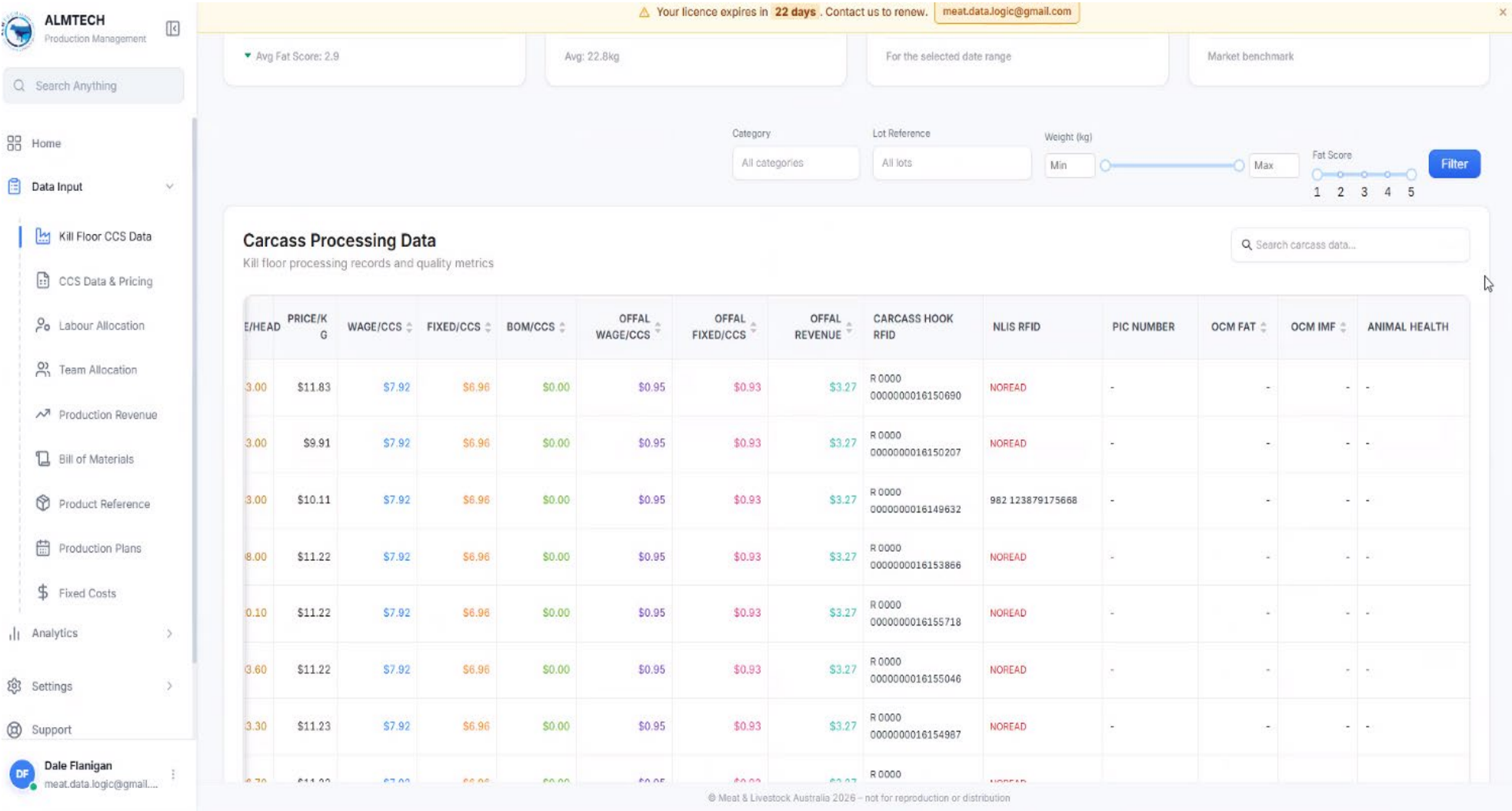
		CARCASS BARCODE	STOCK CLASS	WEIGHT (KG)	ALLOCATED (KG)	PROCESSING COST	TOTAL REVENUE	MARGIN	MARGIN %	PRODUCTS
>		019935...114052	LAMB	36.44	874.56	\$90.54	\$9492.62	\$8996.18	94.8%	24
>		019935...111042	LAMB	35.75	858.00	\$90.54	\$9312.88	\$8824.13	94.8%	24
>		019935...111042	LAMB	35.16	843.84	\$97.00	\$9159.18	\$8670.58	94.7%	24
>		019935...110052	LAMB	34.96	839.04	\$90.54	\$9107.08	\$8627.14	94.7%	24
>		019935...114052	LAMB	34.85	836.40	\$90.54	\$9078.42	\$8599.58	94.7%	24

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7.6 Breakeven Calculator



7.7 Hooktrack Performance Monitor, Carcass Traceability, and Individual Carcass OCM & Animal Health Dashboard



7.8 Product Price Inputs

Home / Daily Production Revenue

Product Pricing Management

Manage product prices and categories

+ Add Product

Import CSV

Export

Pricing Data

Product pricing information and management

Search products...

CODE	PRODUCT	CATEGORY	PRICE (AUD)	EFFECTIVE DATE	ACTIONS
1001	MUTTON CARCA...	SIX WAY	\$8.00	01/01/2025	
1002	MUTTON CARCA...	SIX WAY	\$8.00	01/01/2025	
1005	MUTTON CARCA...	SIX WAY	\$8.00	01/01/2025	
1337	LAMB LEG CHUM...	LEG	\$13.00	01/01/2025	
2001	LAMB SQUARE C...	SHOULDER	\$8.50	01/01/2025	
2002	LAMB RACK CAP ...	RACK	\$28.00	01/01/2025	
2003	LAMB HINDSHAN...	HINDSHANK	\$9.00	01/01/2025	
2004	LAMB RACK CAP ...	RACK	\$28.00	01/01/2025	

7.9 Optimiser GIF

BR Lamb- Pre Setups - Templ

Not Submitted Last edited 20/03/2026 03:45 • admin

Details

Summary

Reconciliation

Insights

Quick Optimise

Advanced

Submit

Plan

WORK IN PROGRESS

Select two or more successful runs to compare

Compare (2)

	DESCRIPTION	STATUS	TOTAL INCOME	INCOME / CARCASS	CARCASSES	SOLVED IN	DATE	
☒	Quick optimisation — BR Lamb - Pre ...	Success	\$92,628.91	\$93.56	990	0.0s	20/3/26, 4:53 am	
☐	Quick optimisation — BR Lamb - Pre ...	Success	—	—	—	—	20/3/26, 4:08 am	
☐	Quick optimisation — BR Lamb - Pre ...	Success	—	—	—	—	20/3/26, 4:07 am	
☐	Advanced optimisation — BR Lamb - ...	Success	—	—	—	—	20/3/26, 4:07 am	
☒	Quick optimisation — BR Lamb - Pre ...	Success	\$92,628.91	\$93.56	990	0.0s	20/3/26, 3:45 am	

Comparison

Showing 2 of 2 entries

EXPERIMENT ID	DESCRIPTION	CARCASSES ALLOCATED	PROFIT	PRODUCT WEIGHT	PROFIT / KG	YIELD RECOVERY
5	Quick optimisation — BR Lamb - Pre Setups - Template - Copy	990	\$-178,840.65	7,947.80 Kg	\$-22.50	29.3%
1	Quick optimisation — BR Lamb - Pre Setups - Template - Copy	990	\$-178,840.65	7,947.80 Kg	\$-22.50	29.3%

Profit Chart