



Final report

Supply Chain Digitalization - Telstra/IBM Garage Sprint

Project code: P.PSH.1446

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Date published: 25 April 2024

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

This is an MLA Donor Company funded project.

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

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Abstract

This project conducted research into the value of an industry platform approach to accelerate supply chain digitisation in the red meat sector and conceptualised an indicative investment case and roadmap to implement and such a platform.

At the outset of the research, four key value propositions were identified to be tested on their potential to deliver value to the industry and accelerate cross industry digitisation. These were:

- Improving productivity and reducing costs with scalable on-farm value propositions;
- Improving access to domestic and export markets;
- Enabling measurement, evidencing and certification of sustainable practice; and
- Improving cashflow through new finance products.

The project used IBM's Garage methodology to engage with a range of industry participants and stakeholders and validate which value propositions were genuinely well positioned to deliver value to the industry and accelerate cross-industry digitisation. Value propositions were further refined through the stakeholder consultation and the subsequent Value Driver Trees estimated that \$1.18b p.a. of value could be created by a red meat supply chain digital platform; driven by Value

Propositions of:

- Digital Processes for Market Access (\$247m),
- Measuring Evidence and Certification of Sustainability (\$252m),
- New Sustainability and Risk-based Financial Products (\$632m); and
- On-Farm Productivity (\$57m)¹.

The key benefit to industry from this project is the characterisation of current state, including an estimate (quantification) of benefits from each of the value propositions. This acts to inform red meat industry stakeholders about the potential benefits of increased supply chain digitisation.

¹ 'On-Farm Productivity' benefits refers to potential flow-back benefits from 2digitization across the supply chain. This specifically excludes potential benefits driven by implementation of Agtech or related technology on farm.

Executive summary

Background

In many industries, cross-supply chain digitisation increases revenue, productivity, resilience and ability to meet obligations including Environmental Social and Governance (ESG). Supply chain digitisation in the red meat industry is sporadic and fragmented, restricting the industry's ability to capture value in areas including:

- Data-driven planning and decision making
- Optimised responses to biosecurity threats and climate variability
- Evidencing environmental impact and sustainable practice
- Utilising digitised data to grow and maintain access to markets

The purpose of the Telstra / IBM research was to:

1. Identify use cases likely to deliver significant value and accelerate digitisation across the red meat supply chain
2. Quantify the value of these use case to the industry and
3. Develop conceptual commercial, operational and financial models for implementation of an industry platform service to realise value from the use cases.

Objectives

All five key Objective from the Statement of Work were achieved. These were:

1. Analysis of the desirability, viability, and feasibility of 4 key value propositions with the potential to deliver significant value to the red meat industry, and drive adoption of cross-industry digitisation.
2. Identify any key cross-industry data infrastructure required to support the propositions.
3. Identification of potential ownership and governance models that are required to support the propositions.
4. Creation of a commercial model for the purposes of developing an investment case Indicative roadmap to commercial launch.
5. Creation of an investment case template detailing the core business model components for presentation to relevant stakeholders.

Methodology

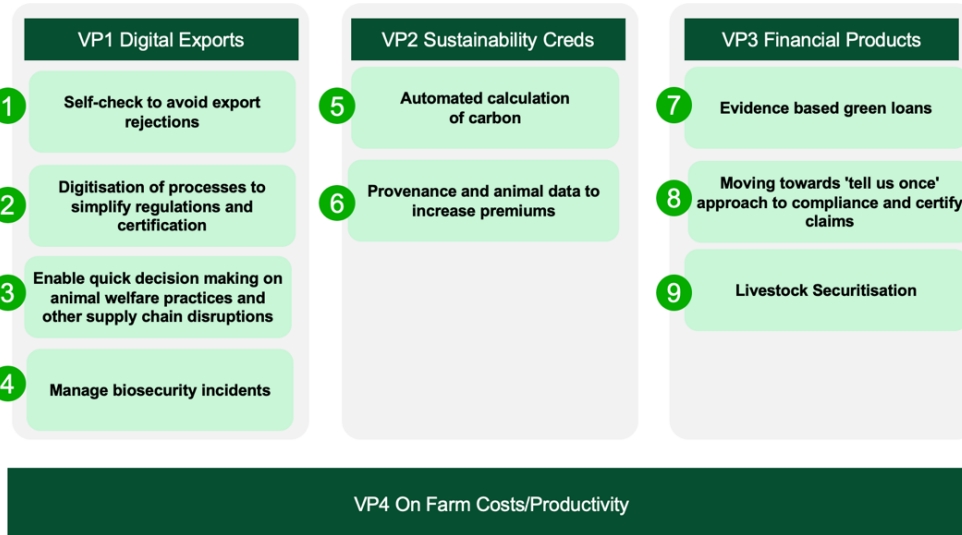
The project used IBM's proven Garage methodology to engage stakeholders such as producers, finishers, processors, digital service providers and researchers. IBM's Garage methodology uses both qualitative and quantitative data to create and test a range of hypotheses. Hypotheses were then aligned to the requirements as provided by each stakeholder and tested using the Desirable-Viable-Feasible framework. 50 stakeholder organisations were identified during the process with 14 engaged / interviewed to gain further insights and feedback on their needs and preferences.

Results/key findings

Engagement results demonstrated a high level of desirability for a cohesive digital future state, but the willingness of individual actors to pay requires further validated.

Estimated \$1.18b of value created by a red meat supply chain digital platform was identified based on the Value Propositions of Digital Processes for Market Access (\$247m), Measuring Evidence and Certification of Sustainability (\$252m), New Sustainability and Risk-based Financial Products (\$632m), and On-Farm Productivity (\$57m)².

Within these four value propositions, an initial nine use cases were identified as priority to accelerate creation of industry benefits. These were:



Benefits to industry

The key benefit from the project is the identification of priority use cases and calculation of estimated benefits from each of the value propositions. Estimating the size of potential benefits from embracing digitisation, while also sketching a path to implementing a data sharing platform which would enable the value creation, helps to inform discussions surrounding the cost / benefit of investment in digital infrastructure.

Future research and recommendations

Future research / activities should focus on testing implementation of specific use-cases with interested parties, thereby proving the creation of benefits (de-risking) and establishing participant’s willingness to pay for implementation of an industry-wide platform.

Any industry-wide platform will need to navigate the challenge of developing and implementing governance and commercial models in a contested space.

² ‘On-Farm Productivity’ benefits refers to potential flow-back productivity benefits from 4digitization across the supply chain. Research specifically excluded potential benefits driven by implementation of Agtech or related technology on farm.

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1. Background

In many industries, cross-supply chain digitisation increases revenue, productivity, resilience and ability to meet obligations including Environmental Social and Governance (ESG). Supply chain digitisation in the red meat industry is sporadic and fragmented, restricting the industry's ability to capture value in areas including:

- Data-driven planning and decision making;
- Optimised responses to biosecurity threats and climate variability;
- Evidencing environmental impact and sustainable practice; and
- Utilising digitised data to grow and maintain access to markets.

Despite previous analysis demonstrating significant value that could be unlocked in the red meat industry with unconstrained digitisation, uncertainty remains regarding:

- How to drive initial digitisation through use case prioritisation (inc. quantification of value creation); and
- Appropriate commercial and governance models for data infrastructure necessary to accelerate realisation of that value.

In this project, Telstra and IBM undertook research to establish the value of an industry platform approach to accelerate supply chain digitisation in red meat sector and provide an indicative investment case and conceptual roadmap to progressively implement and scale that platform. IBM's Garage methodology was used to engage stakeholders such as producers, finishers, processors, digital service providers and researchers.

2. Objectives

All five key Objective from the Statement of Work were achieved. These were:

1. Analysis of the desirability, viability, and feasibility of four key value propositions with the potential to deliver significant value to the red meat industry, and drive adoption of cross-industry digitisation.
2. Identify any key cross-industry data infrastructure required to support the propositions.
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3. Methodology

The project used IBM's Garage methodology to engage stakeholders such as producers, finishers, processors, digital service providers and researchers.

[IBM's Garage methodology](#) uses both qualitative and quantitative data to create and test a range of hypotheses. Hypotheses were aligned to the requirements of each stakeholder and tested using the **Desirable-Viable-Feasible** framework.

3.1 Desirability

Four key activities were undertaken to establish 'Desirability' metrics:

1. Market Research

Target market sizes were calculated using publicly available information. Customer needs were investigated by researching suppliers, revenue models, supply chain scalability, and legal/regulatory impacts. Industry trends and comparative international markets were also analysed to understand potential future / further scope.

2. Stakeholder Mapping

Identified and mapped the customers, their roles, responsibilities, and pain points. Stakeholders were then categorised and relevant use cases prioritised based on the potential value of benefits. Mapping also identified potential roadblocks and risks and provided a framework for communication and engagement throughout the project.

3. Stakeholder Interviews and Survey

Interviews with the identified stakeholders allowed the project team to understand and refine proposed value propositions. Insights from interviews were then summarised and codified to capture the key characteristics, including use cases and business problems.

4. Use case data mapping

After refining use cases based on feedback from interviews, relevant data streams required to create a solution were mapped.

3.2 Viability

Research undertaken to establish 'Viability' include:

1. Estimation of Value Driver Trees

Assumptions were tested to determine targeted levers and measure value creation. and while also evaluate how a solution could scale out to different supply chain participants.

2. Ideation of Commercial Models

Different revenue models such as consumption-based or subscription-based were contemplated as ways to monetise the solution's (platform's) offerings. The commercial model also considered revenue generation through engagements (consulting services) and implementation.

3. Scale out

Telstra / IBM research team worked to develop a view on how the solution scales out to different supply chain participants. This recognised supply chains as complex networks which must be designed to accommodate the diverse needs and requirements of all stakeholders.

4. Risks, Assumptions and Dependencies:

Key risks, assumptions and dependencies were reviewed to identify and allow management of obstacles that may affect customer desirability, technical feasibility, and economic viability.

3.3 Feasibility

1. Customer journey

The research team mapped the journey of an animal and its associated data stream through the current technological landscape.

2. Data Schemas and Identifying data gaps

Current data gaps within the supply chain system entailed mapping the current schemas and the value propositions to specific use cases and considering data which is currently available / being created.

3. Functional capabilities

Data streams were grouped into categories related to individual use cases. The process involves understanding the system, categorising the components, validating them with industry stakeholders, and adapting them as needed.

4. Governance model

This activity was undertaken with the understanding that at the core of the digitisation of the red meat industry there is an ecosystem of participants that need to work together. Ideation of potential governance models will help to establish a fit for purpose governance model for managing relationships, disputes, development roadmap, and business rules of the ecosystem.

4. Results and Discussion

The IBM garage research methodology was used to conduct a study of the present landscape and investigate innovative value propositions that can unlock substantial value. Results and discussion from this mix of qualitative and quantitative research are shown below.

4.1 Case for change

The 'Case for Change' relies on four key tenants:

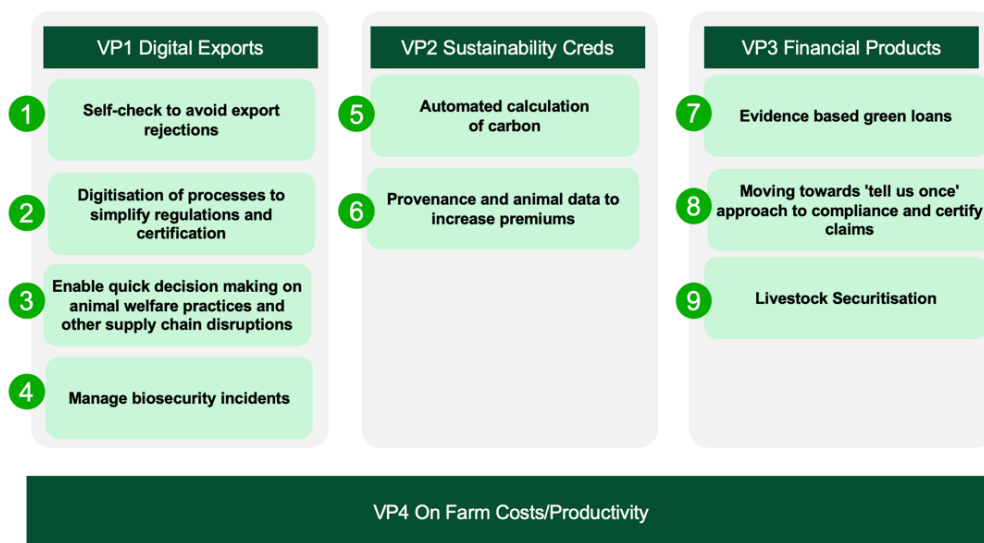
- Well-designed digital solutions can reduce administrative burden of increasing compliance requirements.
- Current red meat digital infrastructure is not suitable for real-time Traceability as a Service applications.
- Technical solutions exist which would allow both controlled and permissioned sharing of data as well as real-time Traceability as a Service applications.

- The red meat industry at large is ready for change.

4.2 Research identified several use cases which would create clear value over short-medium term.

Stakeholder interviews allowed the refinement of both value propositions proposed at the outset of the research, as well as specific use cases which could be implemented to create additional value for industry. Identified use cases with aligned value propositions are shown in Fig. 1 below.

Figure 1: Schematic diagram showing 9 prioritised platform use cases with aligned Value Propositions.



4.3 Large potential cumulative benefits from implementing a Red Meat Supply Chain Digital Platform

With specific use cases identified, a Value Driver Tree (VDT) for each of the four value propositions. The cumulative estimates benefits (Figure 2), as well as a more detailed breakdown for each value proposition is shown in (Figures 3-5) below.

Figure 2: Value Driver Tree showing a cumulative \$1.18b p.a. of value creation across four value propositions from successful implementation of a Red Meat Supply Chain Digital Platform.

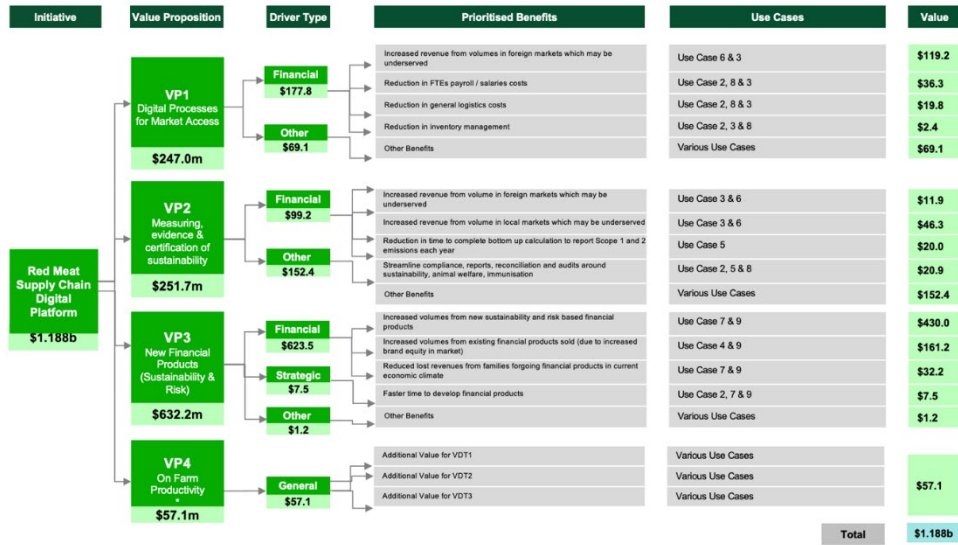


Figure 3: Value Driver Tree showing value creation for successful implementation of 'Digital Processes for market access' value proposition by a Red Meat Supply Chain Digital Platform.

Detailed VDT for VP1 (Digital Processes for Market Access)

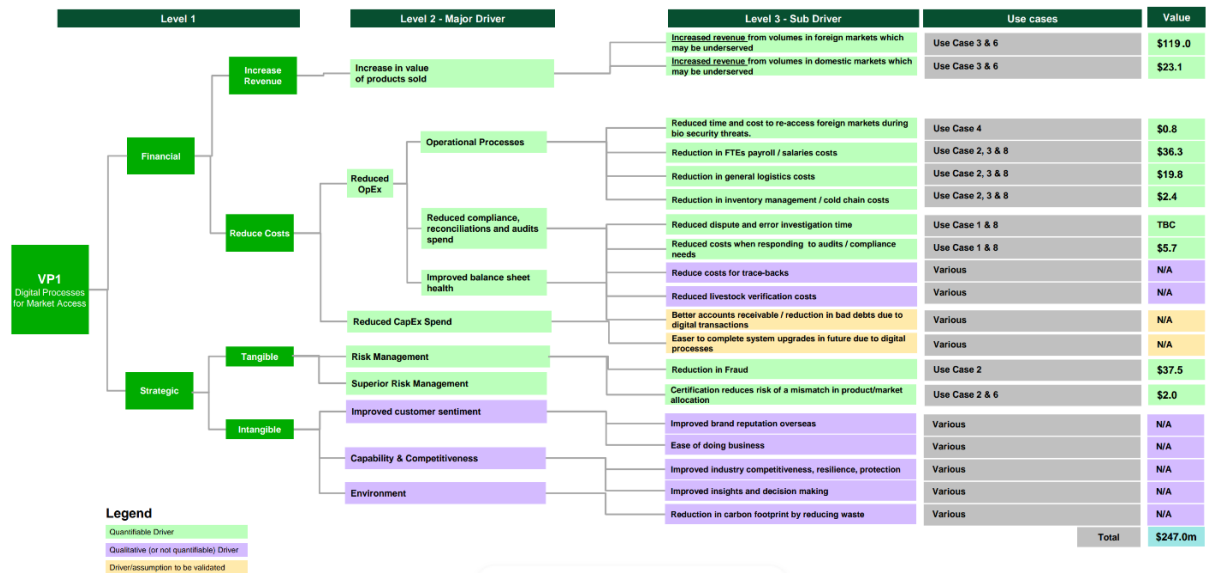


Figure 4: Value Driver Tree showing value creation for successful implementation of ‘Measuring, evidence and certification of sustainability’ value proposition by a Red Meat Supply Chain Digital Platform.

Detailed VDT for VP2 (Measuring, evidence & certification of sustainability)

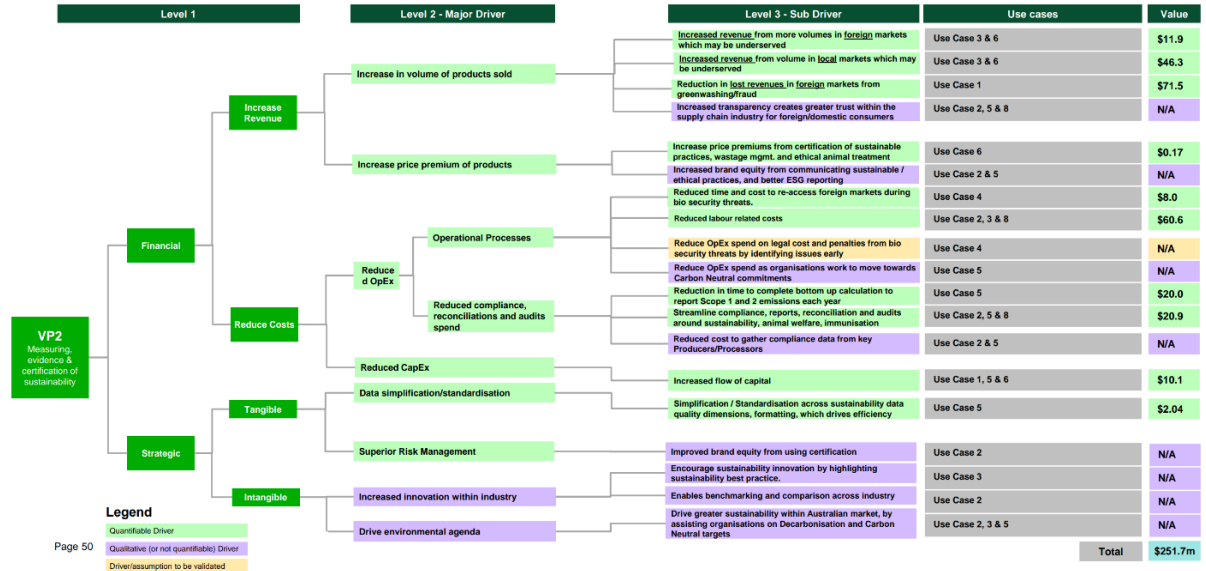


Figure 5: Value Driver Tree showing value creation for successful implementation of ‘New financial products’ value proposition by a Red Meat Supply Chain Digital Platform.

Detailed VDT for VP3 (New Financial Products)

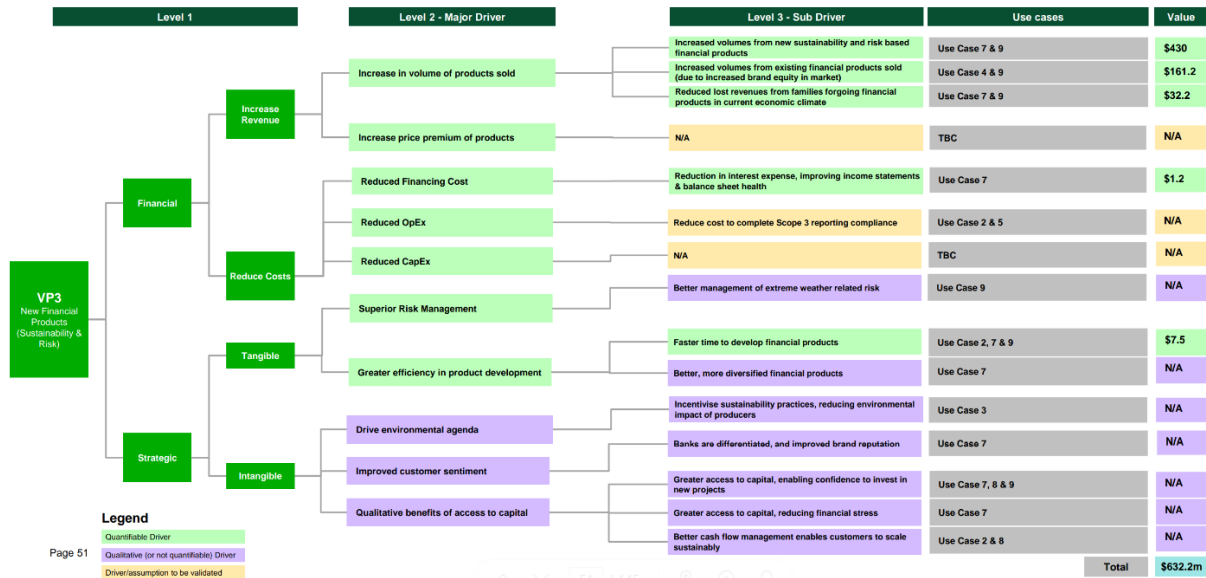
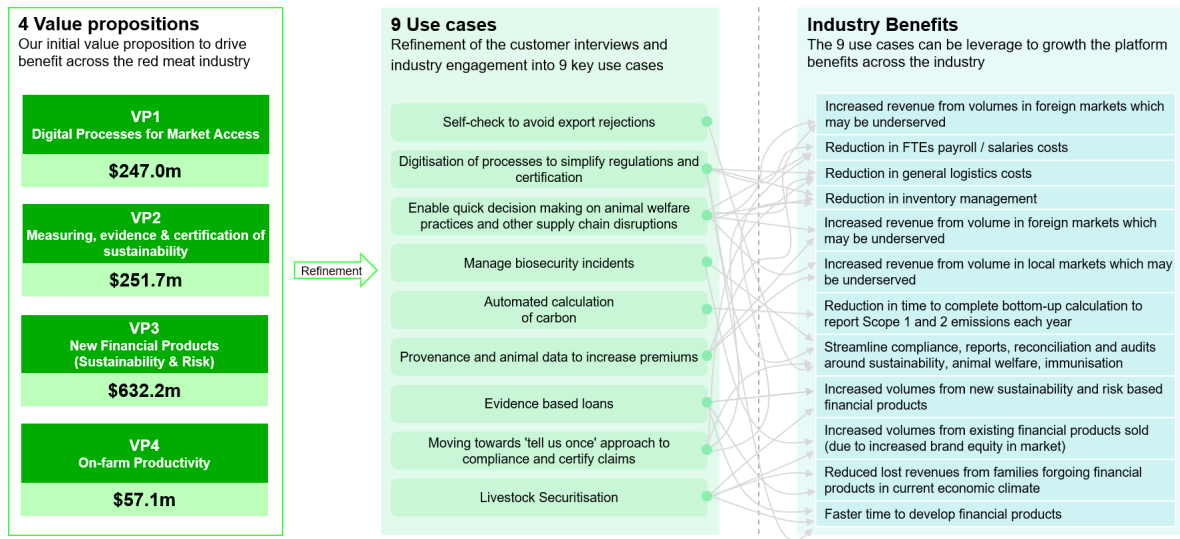


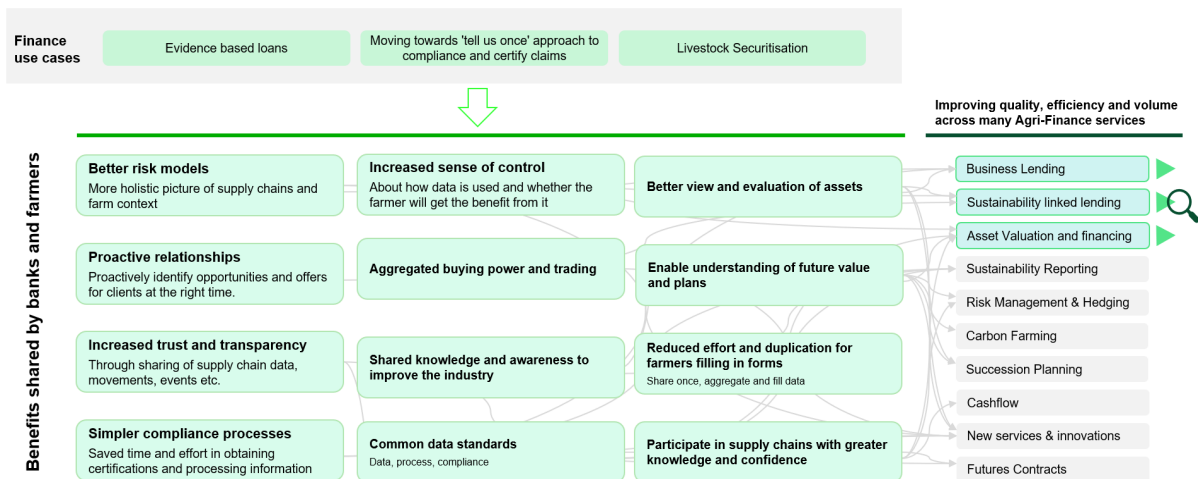
Figure 6: Consolidated schematic diagram showing links four identified priority value propositions, nine used cases and creation of industry benefits.



4.3 Finance case study

Use cases related to new financial products were prioritised for a deeper dive / case study as it brings benefits across multiple industry areas and was judged to bring the largest and most immediate benefits to the red meat supply chain.

Figure 7: Detailed summary of finance use cases and possible benefit creation from a red meat digital supply chain platform.



Unpacking the benefit of “Reduction in Loan interest expense” within the Sustainability Loans shows significant industry benefit and supports the scale of estimated potential benefits of \$685m p.a. for ‘New Financial Products’ (Figure 8).

Figure 8: Schematic summary of opportunity and value creation for red meat sector from a digital supply chain platform.

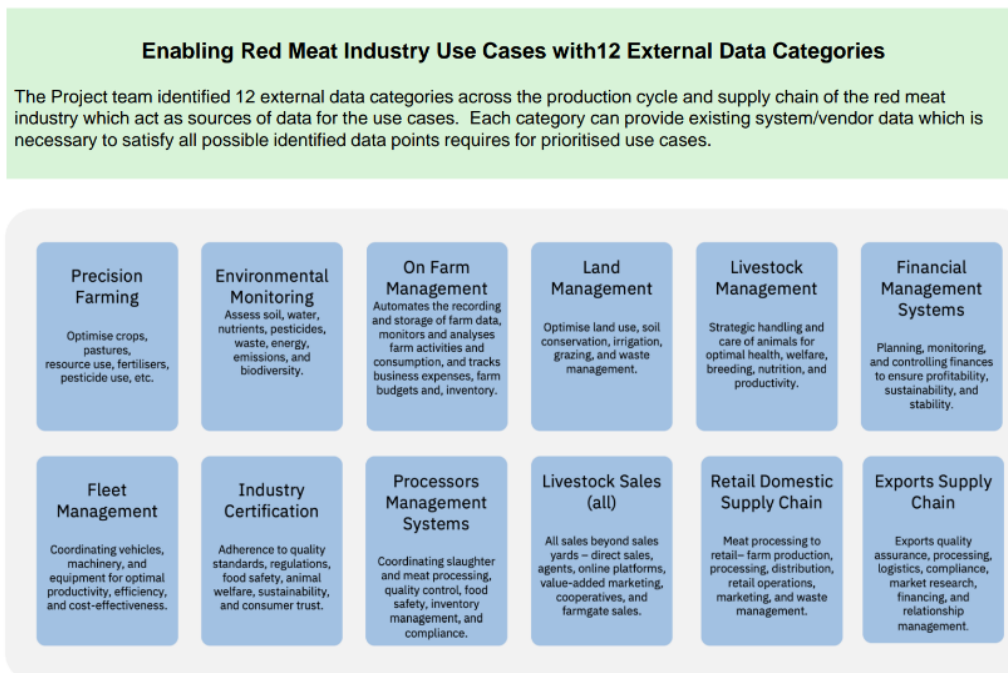


4.4 Unlocking the Potential

As a result of stakeholder interviews and a series of workshops, nine use cases aligned with the four value propositions were identified in Figure 1 above.

The use case refinement process involved consolidating and prioritising the base capabilities that are most desired by our customers. Data categories required to unlock value for use cases were then identified and grouped into 12 management categories (Figure 6).

Figure 9: Identified external data categories required to unlock value from use cases



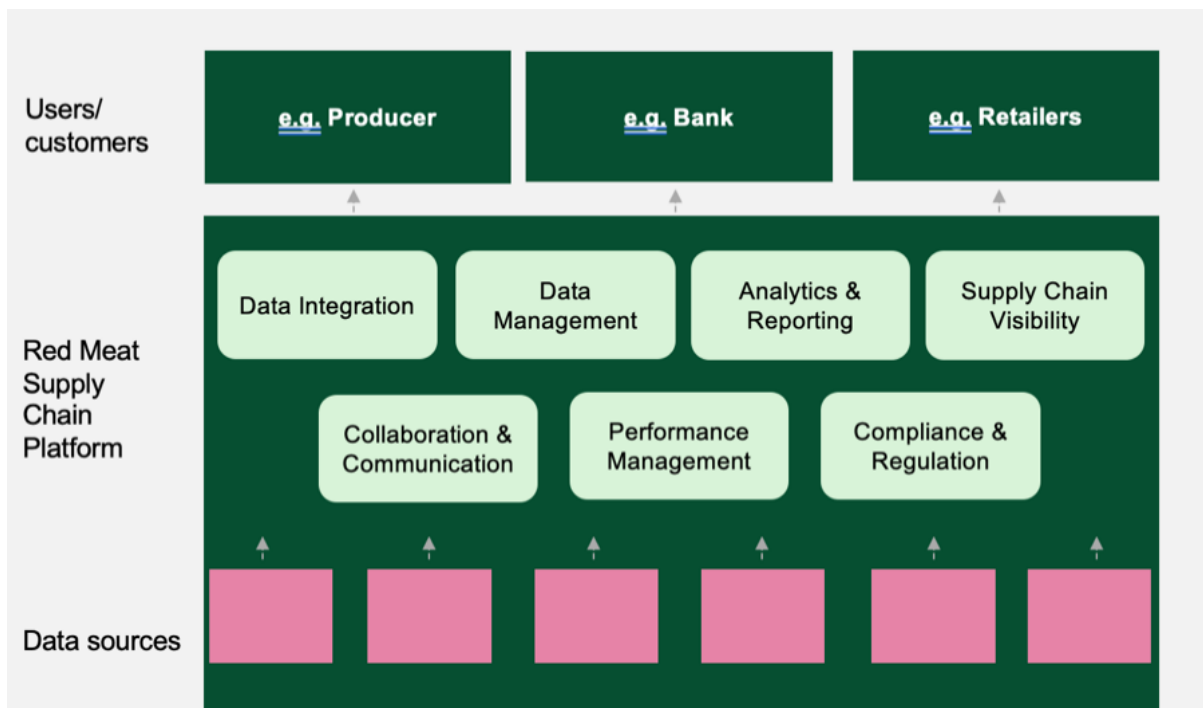
4.5 Principles of platform approach to realise value

To realise these benefits and unlock the value, a standardised data 'Platform' approach is recommended. Key principles of a data platform would include:

- 'Off the shelf' capability to cost-effectively deliver on multiple use cases;
- Data security requirements maintained with principle of "tell us once, share multiple times";
- Data owners remain in control of data permissions;
- Operating model improves engagement and co-ordination at an industry level;
- Retains flexibility to deliver on new and emerging industry use cases; and

The high-level architecture of the 'Platform' is presented in Figure 10.

Figure 10. High Level Architecture of the platform



4.6 Market size and Commercial Model considerations

Estimations of Target Addressable Market, Serviceable Addressable Market and Serviceable Obtainable market were made using the parameters listed below in Figures 8 & 9. Commercial model development considered a matrix of different factors with and impact on operating and financial models (Figure 9).

Figure 11. Estimated Target Addressable Market, Service Addressable Market and Serviceable Obtainable Market for a Red Meat Supply Chain Digital Platform.

	(Target Addressable Market)	x	Filtering	=	Serviceable Addressable Market)	x	Filtering	=	Serviceable Obtainable Market
Def	TAM = Total market available today		Percentage of the TAM		SAM = customers			Percentage of the SAM which the Platform can capture in 3 years		SOM = How much of the SAM penetrate in the first three years
VP1	- 55,569 (Total number of producers (52421), processors (749), banks (96) and retailers (2303) in Australia)		10% of producers and processors		- 5,317			1%		- 53
VP2			10% of producers + processors, retailers		- 5,547			20%		- 1109
VP3			10% of producers + processors, 1% of banks		- 5,320			20%		- 1064
VP4			10% producers + processors + retailers		- 5,547			20%		- 1109
										3335

Figure 12. Matrix of commercial model considerations for a Red Meat Supply Chain Digital Platform.

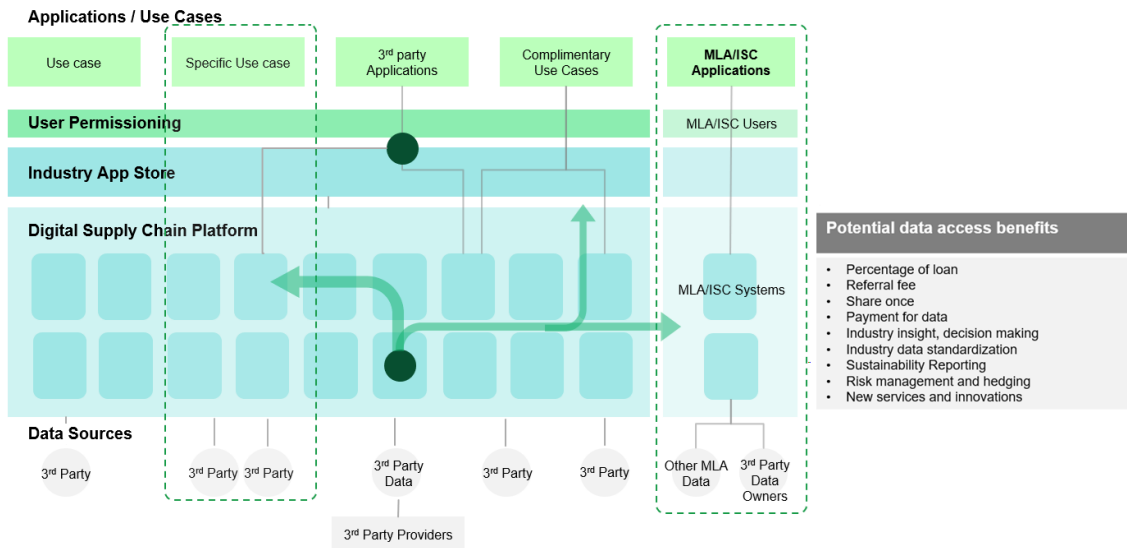
Commercial Model Consideration Areas				
Revenue Objective (cost structure)	Revenue Strategy (revenue)	CapEx Strategy (costs)	Value proposition (key activities)	Stakeholder Segmentation
No cost recovery	Volume	Debt	Retail services (product development)	Consumers – producers, processors, retailers, financial services
Partial cost recovery	Time Based Pricing	External Investments	Vertically integrated (e.g. financial products)	Suppliers – producers, processors
Re-invest for growth	Subscription	Grants	Wholesale (data sales)	Government (domestic and international)

LEGEND
Green Commercial assumption included in Financial Model
Grey Commercial assumption not included in Financial Model Excel, further discussion required in future phases

4.6 Conceptual model and implementation plan.

Combining commercial and operating model consideration facilitated the more detailed supply chain architecture, including consideration of interactions with MLA / ISC applications (Figure 9).

Figure 13. Industry platform model showing how a single data point could be integrated with other data sources for the execution of specific use cases.



Consideration with then given to how the implementation of a Red Meat Supply Chain Digital Platform would be phased (Figure 14) and the timelines within which this might be achievable (Figure 15)

Figure 14. Conceptual implementation phases of Red Meat Supply Chain Digital Platform.

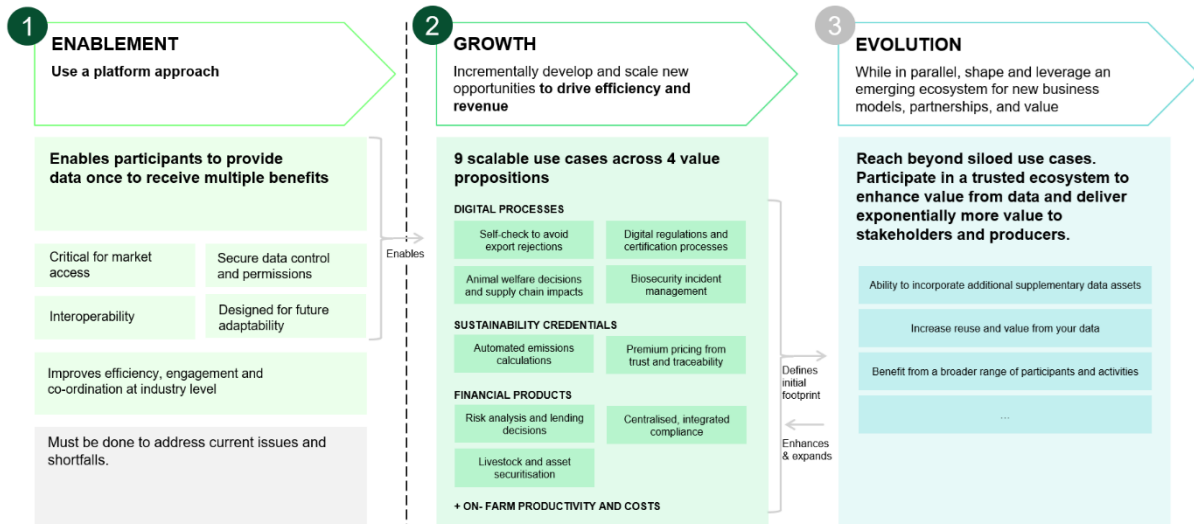
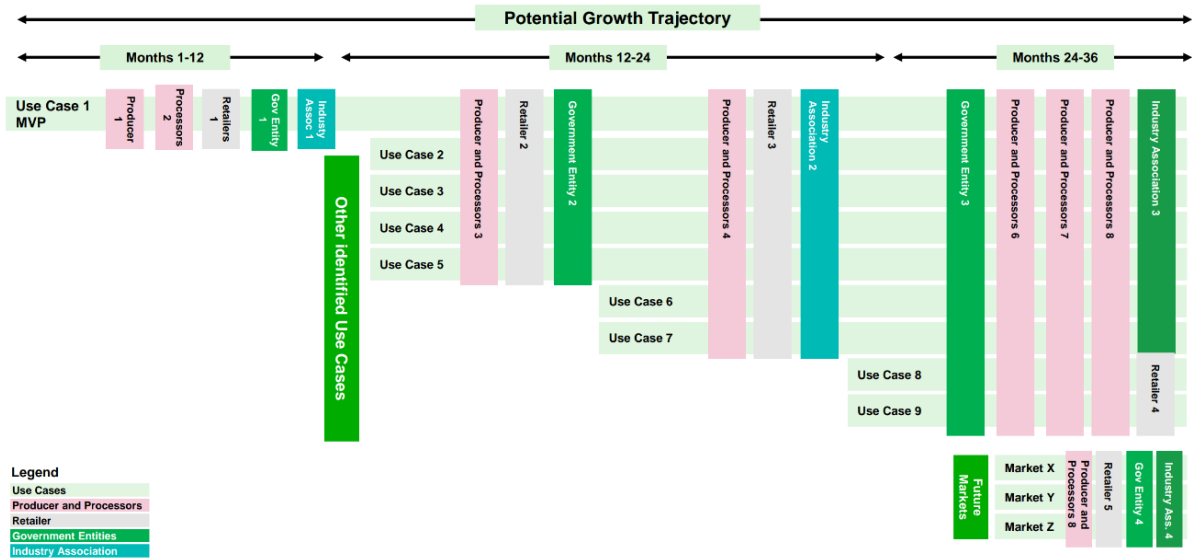


Figure 15. High-level implementation timeline for Red Meat Supply Chain Digital Platform use cases.



4.7 Governance and ownership considerations to support value propositions.

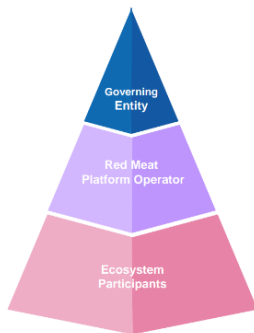
Governance and ownership models were considered in the context of existing players in the red meat supply chain and validated / updated using stakeholder interviews.

Figure 16. Summary of governance and ownership roles and considerations to ensure successful integration of a red meat supply chain digital platform.

Governance remains at the core of the long-term platform success



<p>Embracing ecosystem diversity through fostering inclusivity for all participants</p> <p>The digitisation of the red meat industry and its data-sharing mechanism will strive to be inclusive for all ecosystem participants, with minimal barriers to entry. This inclusivity should extend to the governance of the system, accommodating the diverse needs of the entire supply chain, allowing active or passive involvement based on individual preferences.</p>	<p>Facilitating scalability by enabling seamless expansion in industry</p> <p>The ability to seamlessly expand use cases throughout the platform and effectively leverage captured data sets will be pivotal for its success in delivering substantial value to all participants involved. Emphasising the goal of extracting value from these diverse data points and fostering collaboration within the ecosystem will further enhance its overall impact.</p>	<p>Harmonising compliance and market-driven implementation</p> <p>Effective regulation sets essential guidelines, while market forces drive the efficient and widespread deployment of the solution. Balancing regulatory oversight with market dynamics stimulates innovation, competition, and scalability, unlocking the solution's full potential within the established framework. This approach optimises efficiency, reach, and overall impact.</p>
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Responsibilities	
<p>Managing the Platform Playbook</p> <ul style="list-style-type: none"> Define and enforce the rules of the network, including standards, policies and processes Manage business, technical and legal considerations 	<p>Roadmap and Planning</p> <ul style="list-style-type: none"> Validate the platform roadmap Provide input in policies and standards for data structure for appropriate decision making
<p>Run and Operate the Platform</p> <ul style="list-style-type: none"> Perform technical onboarding & maintain the Platform Ensure performance, stability, security and capacity management Provide operational support and help desk 	<p>Build Features Updates</p> <ul style="list-style-type: none"> Define the Platform roadmap, and prioritise solution functionality for future releases by working with the current and future Ecosystem Members Deploy updated solutions and ensure broader continuity Work with the broader ecosystem of Vendors to respond to existing pain points
<p>Engagement</p> <ul style="list-style-type: none"> Regularly engage with Governance structures Attest to defined rules, standards, policies and processes and ensure continued compliance 	<p>Compliance</p> <ul style="list-style-type: none"> Responsible for compliance with rules, standards, policies and processes Shared responsibility model, e.g. security

5. Key Messages

An estimated \$1.18b of value created by a red meat supply chain digital platform was identified comprised of value propositions related to:

1. Digital Processes for Market Access (\$247m);
2. Measuring Evidence and Certification of Sustainability (\$252m);
3. New Sustainability and Risk-based Financial Products (\$632m); and
4. On-Farm Value Capture (\$57m)³.

5.1 Benefits to industry

The key benefit from the project is the calculation of estimated benefits from each of the value propositions. This shows the potential benefits to the red meat industry of embracing digitisation. The project also sketches a path by which the industry can look to implement to data sharing platform and outlines high level consideration for the commercial and governance model.

6. Conclusions / Recommendations

Future research / activities should focus on testing implementation of specific use-cases with interested parties, thereby proving the creation of benefits (de-risking) and establishing participant's willingness to pay for implementation of an industry-wide platform.

Any industry-wide platform will need to navigate the challenge of developing and implementing governance and commercial models in a contested space.

7. Appendix

Relevant artefacts created as part of this project include:

- *MLA Project Final Report – Confidential version*
- *MLA Research Final Deliverable*
- *Assumptions Matrix*
- *Interview Guide Template*
- *Customer Invite*
- *Commercial Model Excel*
- *Value Driver Tree Excel*
- *Murals*
 - *Mural: Kick Off Workshop*

³ On-farm value capture was calculated as 5% of other streams (research did not look at detailed on-farm use cases)

- *Mural: Internal Workshop Unpacking Value Proposition*
- *Mural: Data Gaps Per Use Case*
- *Mural: Paddock to Plate Data Landscape*
- *Data Gaps Analysis*
- *MLA Investment Case – Final Report*

The below references were used to establish reference values for the Industry Benefit analysis.

- MLA Annual Report 2021-22
- State of the Industry Report
- MLA Investment Plan
- MLA Proposed Governance
- MLA NPV Data
- ABS Counts of Australian Businesses 2022
- ABARES Disaggregating Farm Performance Statistics 2022
- APRA Statistics Authorised Deposit-Taking Institutions 2022
- IBIS World - Beef and Cattle Farming in Australia
- IBIS World - Regional and Commercial Banks in Australia
- IBIS World - Meat Processing in Australia
- IBIS World - Fresh Meat, Fish and Poultry Retailing in Australia
- IBIS World - Beef Cattle Feedlots in Australia