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MEAT & LIVESTOCK AUSTRALIA

Final report

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Online tools research

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Abstract

Lavender was engaged by MLA to evaluate the current Online Tools and identify opportunities for improvement, integration and consolidation. Lavender also investigated the feasibility and appetite of a Member Hub. The purpose of the Member Hub is to store MLA member's business data with the intention of reusing data across tools and create a more personalised online experience that integrated eLearning and research content based on a producer's enterprise and location.

Executive summary

Meat & Livestock Australia Limited (MLA) delivers marketing and research and development services for Australia's cattle, sheep and goat producers.

The MLA website www.mla.com.au publishes content and online tools to assist producers utilise and implement the findings and recommendations of the latest research, which enables them to improve their productivity and profitability.

MLA's current suite of online tools were developed individually and independently of each other, some up to 10 years ago, usually with one specific calculation or outcome in mind. Over time as livestock producers have become more informed and internet savvy the current tools have become outdated and fragmented. In addition, as stand-alone tools, they require users to understand their relevance and benefits rather than being more intuitively found and utilised without guidance.

As part of the research methodology, Lavender conducted a series of workshops and one-to-one interviews with producers from both Northern and Southern states of Australia. Lavender also conducted expert technical and usability reviews and an analysis of Google Analytics web tracking data to determine technical and design issues.

A strategic framework was developed along with detailed recommendations on the tools and calculators to address the research objectives and provide guidance for the next stage of the project.

Strategic framework

Design: Lavender has recommended a three- layered approach to all future redesigns and new development. This includes a clear introduction page, an updated user interface and a distinct set of results that highlight how to interpret the results and apply them to the producer's business operations.
A set of usability guidelines have been developed to achieve this approach.

Technology: Lavender has recommended MLA implement a software development and governance model to ensure consistent and streamlined tool development.
Tools should be re-developed to standards compliant HTML removing the reliance on Flash and Excel, which are inaccessible and not scalable.
Mobile penetration is high on the MLA site and as such the tools must be developed to enable cross-device compatibility to ensure uptake.

Governance: The governance framework proposed involves the Industry Communication and Engagement Team (ICE) being engaged earlier in the research process to ensure tool and learning design is done during the research phase and not as a retrospective process. Under this model, Research and Development teams can continue to develop tools as part of research programs, but the tools should be considered prototypes that are used as a functional model for development by the ICE Team.

Member Hub: The proposed Member Hub should proceed. It is what producers are expecting, it will make the tools easier to use and more relevant and it will provide more guidance on how to use them.

Tools and calculators

There are critical usability issues across most tools, which make it difficult for producers to understand the purpose, data input and the results. There is a clear need to highlight the purpose and benefits as most producers do not understand what the tools are for. Certain tools add little value for the amount of data entered. Tools that take minimal input but provide meaningful results are easily adopted and understood best. Lavender has provided findings, key insights, recommendations and 92 user requirements for each of the calculators. For each tool, Lavender recommends either a simple update to the user interface, a more detailed redesign of inputs and results, or removal from future development consideration.

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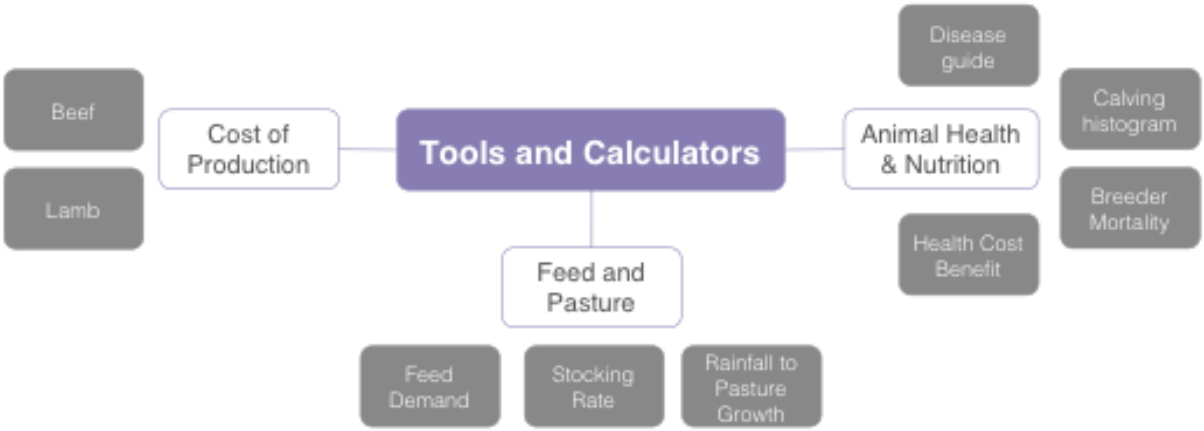
1. Project overview

Lavender was engaged by Meat and Livestock Australia ("MLA") to conduct research on their tools. The objectives of this research were to provide recommendations on:

- The usage, currency and relevance of the current online tools.
- A member hub which securely stores personal and business information to enable pre-populating of tools, data flow between tools, linking tools with further relevant content and resources on the MLA website/s.
- The consistent delivery of MLA information and messages across mobile, web and tablet.
- Developing best fit online solutions to fill producer knowledge gaps and aid adoption of MLA's program outcomes.

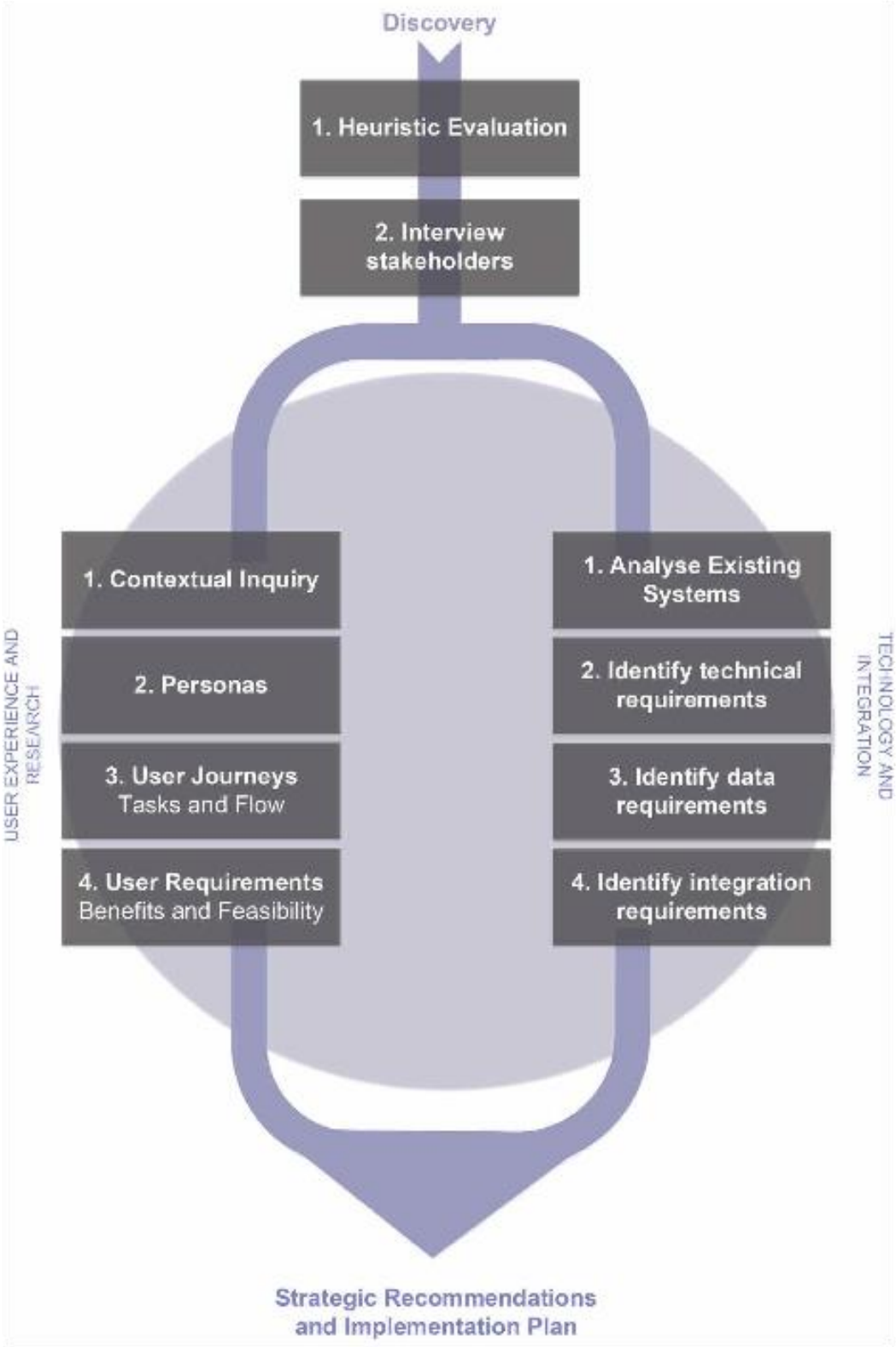
The scope of the project was to deal with the following tools:



Project Approach

Lavender proposed response to MLA was to conduct the following process:

- Stakeholder interviews
- User research
- Expert usability and technology review
- Expert analysis of Google Analytics
- Personas
- User requirements
- Recommendations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Benefits and Feasibility
1. Analyse Existing Systems
2. Identify technical requirements
3. Identify data requirements
4. Identify integration requirements
USER EXPERIENCE AND RESEARCH
TECHNOLOGY AND INTEGRATION
Strategic Recommendations and Implementation Plan

Expert usability review

Lavender conducted an expert usability review of each of the MLA tools. This is where you score each tool against a set of usability principles. (The principles Lavender used to assess the tools are contained in Strategic Framework and the scoring template is in the Appendix). Several tools received a score of “poor” in the expert usability review with the highest score being “moderate”.

Expert technology review

A detailed review of the MLA infrastructure was conducted to identify requirements in three areas:

1. Data security – to validate the existing methods of capturing and storing data from MLA members and ensuring these meet industry standards.
2. Integration – a review of the sources of data across the MLA-managed sites was conducted and opportunities for integration were investigated.
3. Device and Application compatibility – a technical review of the Online tools and how they performed across different devices including web browsers, tablet and mobile devices.

Expert review of Google Analytics

Lavender conducted an expert review of the MLA Google Analytics account. Lavender reviewed page views, average time on page and bounce rates for each of the MLA tools during the period of January 2013 to August 2013. Lavender analysed these results and considered them in the recommendations.

1.1. Research Methodology

Lavender conducted the following research into the MLA tools:

- Stakeholder workshops
- Focus groups
- Phone user interviews
- Face to face user interviews

Stakeholder workshops

Lavender conducted three internal workshops with key stakeholders of MLA:

1. Technology team on May 28th 2013
2. Research and Development ("R&D") team on June 12th 2013
3. ICE team on July 18th 2013

During these workshops Lavender discussed the vision and objectives for the project, the target users and the business and technical constraints. Lavender then discussed each of the tools and facilitated discussion around the following questions:

- Who is the user?
- When and how is it used?
- What information does the producer need to use the tool?
- What are the opportunities for improvement?
- What are possible overlaps/opportunities for integration with other tools?
- What further resources/content could this be linked to?

Lavender recorded the sessions and analysed them for insights and requirements for the tools.

Focus groups

Lavender conducted two focus groups with producers on July 25th 2013. The twelve participants were taken from the MLA Challenge program and contained producers from various agronomic backgrounds.

Prior to the sessions Lavender gathered background information about the participants. Lavender used this information to prepare a script and worksheets for the participants to complete during the sessions.

During the focus groups Lavender asked producers to identify the key issues they face with managing their finances, animal health and production and feed and pasture. Lavender then discussed each of the tools and gained detailed feedback on their likes and dislikes.

Lavender recorded the sessions and collected the worksheets and analysed them for insights and requirements for the tools.

Phone user interviews

Lavender conducted four phone interviews with producers of various agronomic backgrounds:

1. Bill – Consultant (NSW - Cattle)
2. Fiona (NSW - Cattle)
3. Mike (WA – Cattle & Sheep)
4. Julian (VIC – Cattle)

During these interviews Lavender asked producers about their farming backgrounds, technology use, record keeping and tools. Lavender then discussed each of the tools and gained detailed feedback on their likes and dislikes.

Face to face user interviews

Lavender conducted three face-to-face interviews with producers from the Goulburn area on August 12th 2013. Lavender traveled down by car to speak with the following producers in their homes:

1. Roo (Cattle)
2. Crystal (Cattle – Stud producer)
3. Rob (Sheep and Cattle)

During these interviews Lavender discussed their farming backgrounds, technology use, record keeping and tools. Lavender then asked them to use each of the 8 MLA tools and discussed and observed any issues they encountered. Lavender recorded the sessions and analysed them for insights and requirements for the tools.

1.2. Producer and stakeholder background information provided

Lavender analysed the raw data from the research to create the following findings:

The users

Producers

- The tools were designed to help producers with their business, which they need some assistance with.
- There is a significant difference between producers from the low rainfall states of QLD, WA & NT ("Northern") and the more temperate zones of NSW, VIC, TAS, SA ("Southern").
- Northern producers have "less opportunity for intervention" which means that they have less of a need for online tools.
- Southern producers tend to have "more intense" smaller farms. They use more consultants, their stock have a greater risk of parasites and they have higher input costs.
- It is fair to say that most of the tools were developed for the Southern producers.
- Producers can also be considered in their two main enterprise types: sheep and beef.

Consultants

- Consultants are a conduit for producers; they use the tools so that they can charge producers a fee to advise them on their business.
- Very few consultants live in Northern Australia, most consulting happens in the Southern more temperate states, mainly because this is where the consultants can offer the most benefit.
- Most consultants are actually producers as well.
- They use the tools as a conversation starter, particularly the Cost of Production.

Tools and Calculators

- The MLA tools were mostly designed as part of the "More Beef from Pastures" and "Making more from Sheep" learning programs.
- They seem to disparate and disconnected when not viewed in the context of the learning programs.
- Most producers thought the tools were very useful and wished they had known about them before.
- Some tools were clearly more useful than others such as the Stocking rate tool.
- There was some concern that most of the tools were too complex and hard for average producers to use.
- The tools provide producers with results but in most cases do not provide any further guidance or other relevant content to consider.

Member hub

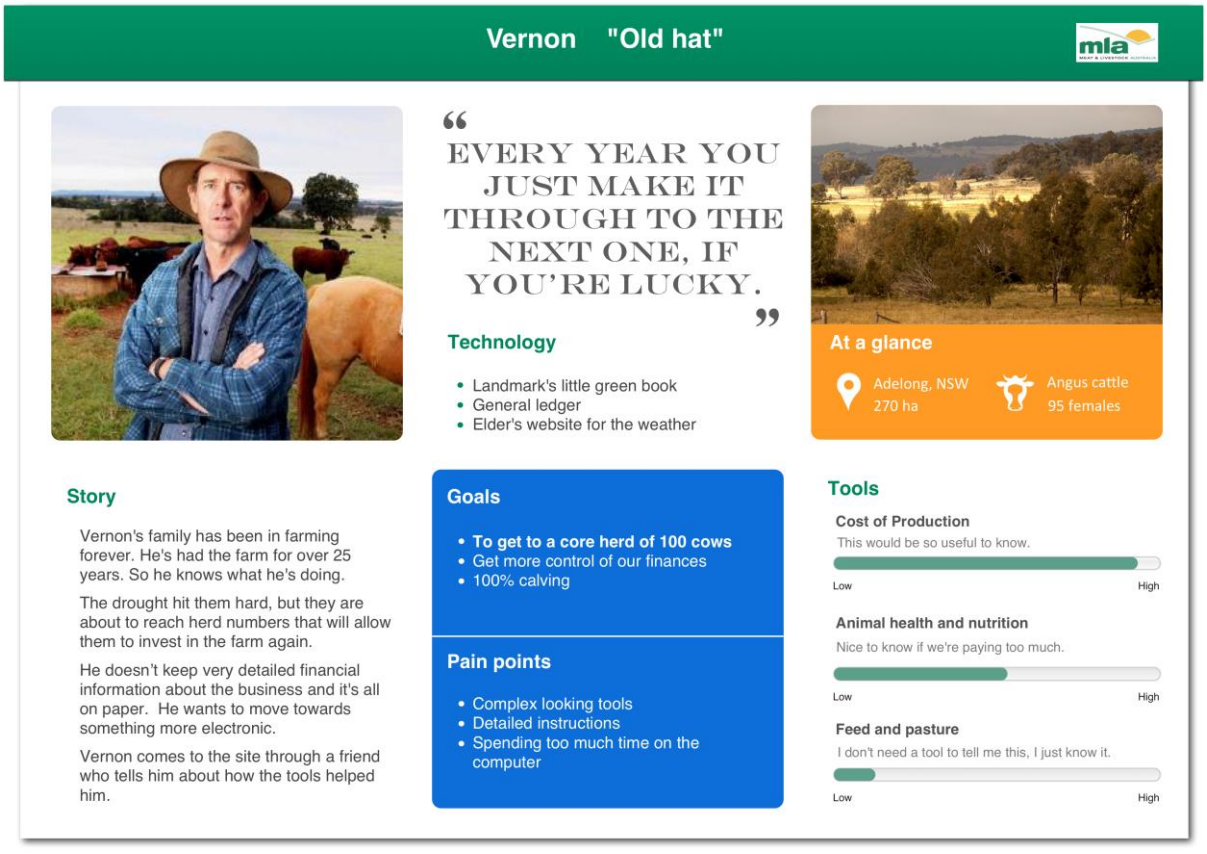
- The member hub was generally thought to be useful because it would save producers from having to enter information all over again.
- Producers said they would be comfortable saving data online because, “everyone else seems to do it” and they didn’t think their data would be relevant to anyone else.
- Some producers actually thought that MLA already provided this facility.
- Some producers thought the member hub was a good idea but it was more important to be able to see things on their mobile/tablet.
- There was some concern that saving mortality data could get into the wrong hands and be taken out of context.

Personas

Personas are a uniquely powerful tool for improving the user experience. By consolidating raw data into a character, they allow us to effectively communicate how users behave, what they are thinking and what they want. They are also very effective in validating design decisions and keeping the user front of mind during the design and development process.

The following personas were created using research insights, behaviour patterns and common goals that describe how key user types use MLA tools. These personas show:

- What tools they find useful and compelling
- What goals drive them to use the tools
- What problems they typically encounter



Phil and Georgie *"Late Comers"*

"WE NEED SOMETHING TO HELP US MAKE LESS EMOTIONAL DECISIONS"

Technology

- Smartphone for notes
- Excel for finances
- BoM website for the weather

At a glance

Bothwell, TAS
1800 ha

Merino
7000 head

Story

Phil and his wife Georgie moved to the country to start a new life. Phil has a degree in Environmental Science and Georgie has a background in Sales and Marketing.

Things haven't gone so well initially. What started out as a passion has become an administrative nightmare. They find they are having a bit of trouble making ends meet.

Phil comes to the site through a local farm consultant who encourages him to take a look at some of the on-farm tools.

Goals

- **Build our management skills**
- Understand the limitations of our business
- Increase the lamb heavy weight %

Pain points

- Technical language
- Not knowing where to get inputs from
- Results that don't help us make decisions

Tools

Cost of Production
We really need to get onto this.
Low — High

Animal health and nutrition
This is a vital issue for us.
Low — High

Feed and pasture
We could definitely use a few pointers.
Low — High

Luke "Straight shooter"

"WE'RE NOT NEARLY AS EFFICIENT AS WE COULD BE."

Technology

- Diary for notes
- Agrimaster for the finances
- CliMate for the weather

At a glance

Dulacca, QLD
28, 328 ha

Doughtmaster X cattle
1000 females

Story

Luke and his wife Fiona are fifth generation beef producers. Robert has a diploma of animal production and a passion for more advanced cropping techniques such as cell grazing.

They are very motivated to improve their farm and seem to have everything under control.

Luke is an MLA member who receives the MLA newsletter. They decide to check out the feed tools to help them plan for the next 12 months.

Goals

- **Increase the efficiency**
- Increase the scale of our operation
- Make their farm more sustainable

Pain points

- When it not mobile friendly
- When it's not flexibile
- When it doesn't cover my circumstances

Tools

Cost of Production
We're already onto this.
Low — High

Animal health and nutrition
We've got this under control.
Low — High

Feed and pasture
This is where science can really help us.
Low — High

2. Strategic framework

2.1 Tools and Calculators

Current state

The tools currently sit on the MLA site without any context or associated meaning. They are removed from the learning programs they were developed in. The interfaces are input heavy and are difficult to use. They do not provide clear actionable results, relevant next steps or related content.

Recommendation

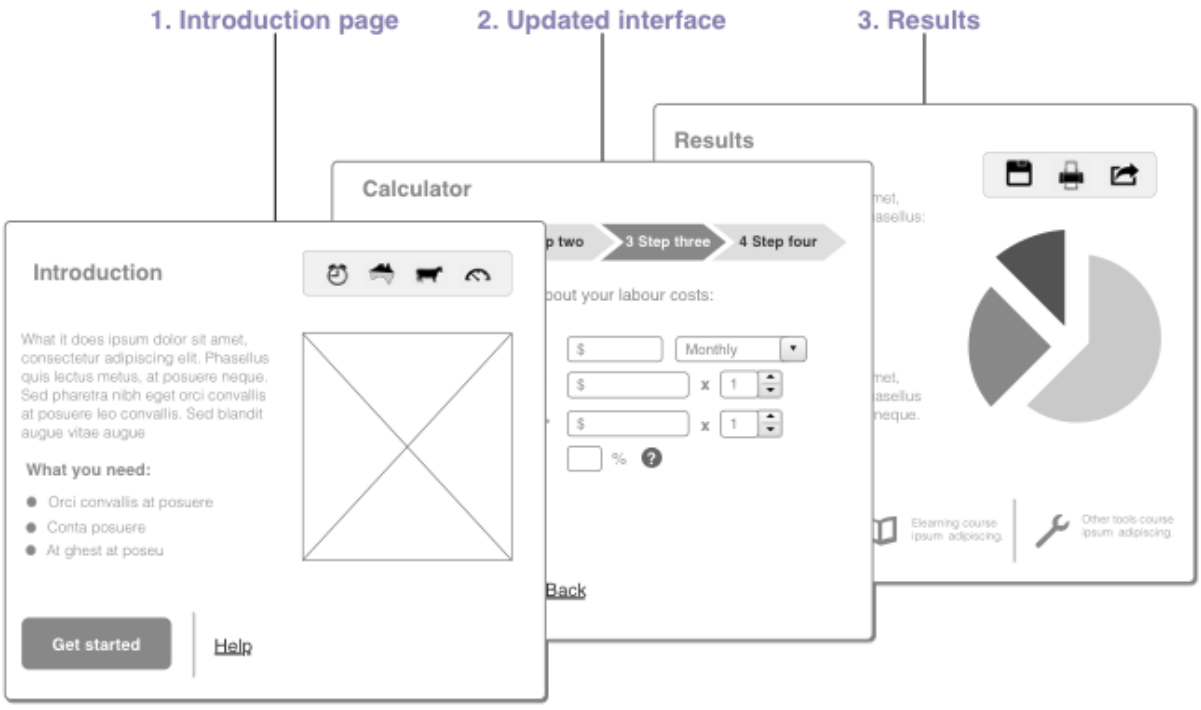
It is recommended that all the tools be redesigned to fit back into an eLearning framework such as the “More Beef from Pastures” module. A framework such as this would provide a linear flow for using MLA tools and include decision points, actionable next steps and links to other relevant content.

Design approach

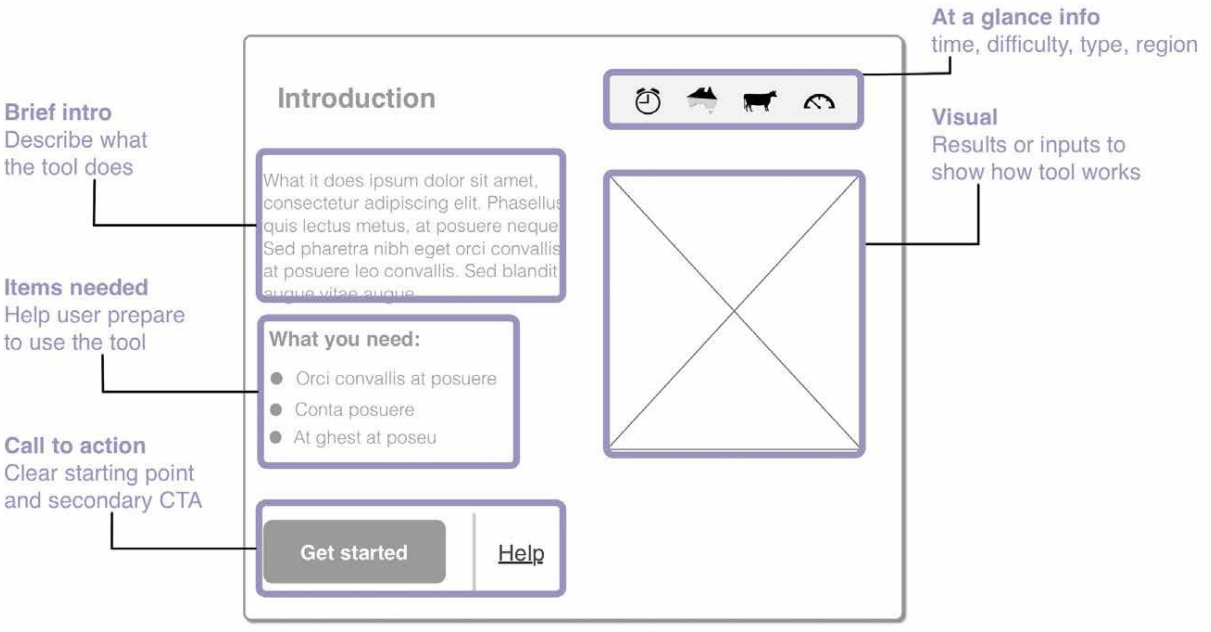
Lavender recommends that all tools include:

- Introduction page - a clear introduction to provide context for producers, sets expectations and prepares them for using the tool.
- Updated interface – makes the tools faster and easier to use
- Results – distinct results to allow producers to perform scenarios, make decisions and save/export their work.

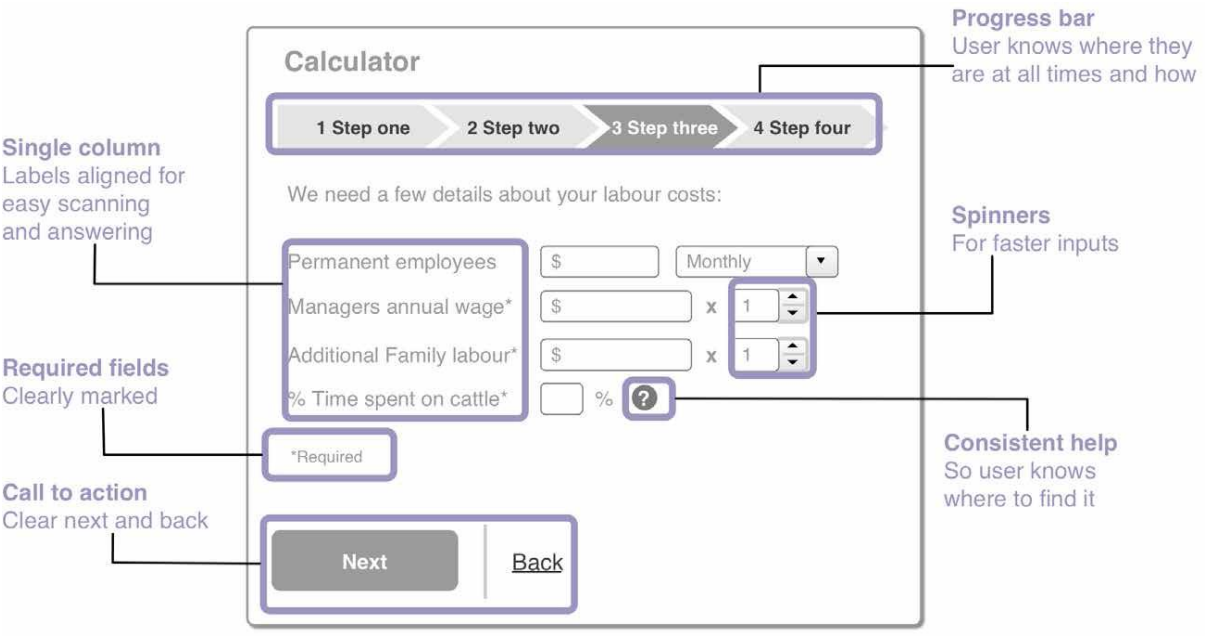
The following diagrams illustrate this new framework:



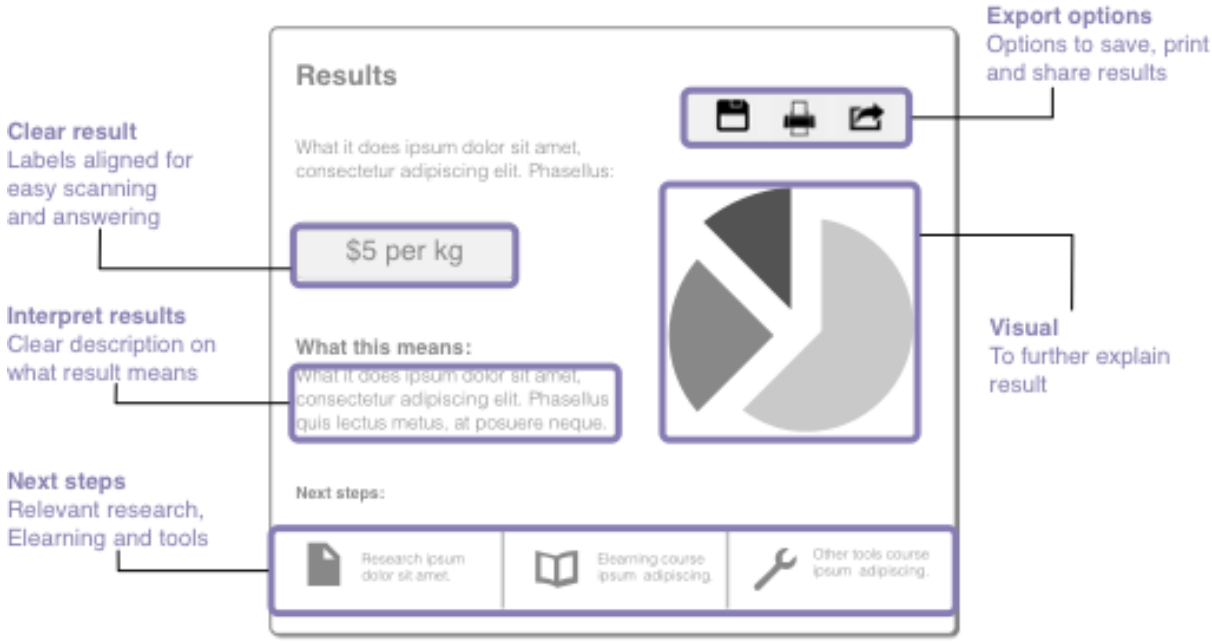
Introduction



Updated interface



Results



Usability guidelines

The following usability guidelines are recommended for all redesigns and future development of new tools.

Introduction page		Importance
1	The introduction page includes a clear CTA and is effective in orienting and directing producers to their desired information and tasks	High
2	The introduction page offers clear instructions.	High
3	The introduction page content is written in plain language.	Medium
Interface		
4	Complex tools are broken up into readily understood steps and sections. Where a process is used a progress indicator is present with clear numbers or named stages.	High
5	The questions flow from anticipated to surprising and from less intrusive to more intrusive.	Medium
6	A minimal amount of information is requested and where required justification is given for asking for information.	Medium
7	The label alignment matches the type of questions being asked i.e. left for personal, right for slot in and top when scanning is not necessary. And avoids a multi-column layout.	High
8	The tool uses appropriate input fields (e.g. calendar for date selection, drop down for selection).	Medium
9	Inputs include smart defaults where possible and do not require the user to make an additional calculation.	Very High
10	Required and optional form fields are clearly indicated.	Low
11	The tool does not contain any surprising elements or interactions.	High
12	Errors are clear, easily identifiable and appear in appropriate location (e.g. adjacent to input field, adjacent to tool, etc.).	High
13	Error messages are concise, written in plain language and describe what's occurred and what action is necessary.	Medium
14	Common user errors (e.g. missing fields, invalid formats, invalid selections) have been taken into consideration and where possible prevented.	Medium
15	Producers are able to easily recover (i.e. not have to start again) from errors.	Medium
16	Help and instructions (e.g. examples, information required) are provided where necessary.	Very high

17	Help and instructions are positioned where producers can readily find them i.e. beside labels if user activated, beside fields if automatic, in a separate help section where there is a lot of help required.	High
18	Help is concise, easy to read and written in plain language.	Medium
19	Producers can easily get further help (e.g. telephone or email address).	Medium
Results		
20	The tool has a clear primary action and a visual distinction between primary and secondary actions.	High
21	Results are clear and distinct from inputs and use visuals where possible.	High
22	Results can be interpreted easily and contain clear next steps.	Very high
23	Results contain links to other useful and relevant content (e.g. related pages or external websites).	Medium
24	Producers can perform scenarios on results.	Medium
25	Producers should be able to print results easily.	Very low
26	Producers can save/export/share results easily.	Low
27	Producers can provide feedback on using the tool.	Low

2.1. Technical

Key Issues

- Currently none of the tools are compatible with mobile devices due to the large reliance on Flash as the delivery method. The usage of mobile devices on the MLA website is upwards of 20%, which is a significant amount. Lavender's research indicates that the majority of producers use mobile and tablet devices daily for core business activities.
- Similarly, some of the tools have been developed in Excel but rely on Macros to perform calculations. Macros are commonly blocked by default for security reasons and must be enabled manually. The current Excel tools also displayed compilation issues (ability for the Macro code to execute) on newer versions of Excel.
- Due to the way the tools have been developed, it is not possible to save data to a central location or perform scenario planning (being able to compare two different results from a tool). Data from one tool cannot be used for another tool and requires producers to manually enter information they may have already entered in a previous tool.
- The tools have not been developed in a common way and the framework on which they are built means that they will not integrate into a Member hub effectively nor support multi-device compatibility.

Recommendations

- It is recommended that all the tools are re-developed using .NET as the application framework (the same framework in which MLA.com.au is built upon) with the front-end based on standards compliant HTML. The tools should have two layouts – one for desktop and one for mobile. Whilst the tools require redevelopment, the core logic of the tools does not need to change.
- Many of the tools share common data fields such as herd data (number of cows, bulls etc.) - this data could be better shared between tools by developing a centralised data mapping table. This table would contain all data fields used within the tools and indicate which field corresponds to each tool. The data will then be available between tools, minimising data entry. A data mapping table has been included in the Appendix of this document to illustrate the relationship amongst the existing tools.

Implementation Approach

Lavender estimates that the re-development of the Online Tools would take up to 6 months of development.

It's recommended that the re-development follow the following stages:

1. **Scoping and Business Requirements Re-Validation** – identifies the scope of the project, the tools to re-develop and the budget. Ensures the requirements are clarified and documented.
2. **User Experience and Visual Design** – involves the re-design of the Online Tools and the Member Hub to address the recommendations of this report and requirements defined by MLA.
3. **Technical Design** – determines the data structures, development requirements including hosting and infrastructure and data services for integration with MS Dynamics (Stakeholder Relationship Management system).
4. **Prototyping and User Testing** – prototypes a series of the re-designed online tools with producers to measure usability prior to development. This will validate the design of the tools with actual users.
5. **Build** – development of the re-designed tools, integration with MS Dynamics and development of the Member Hub.
6. **Testing –** of the online tools and member hub by the ICE Team and validation with producers.
7. **Deployment.**

Development Guidelines

The following guidelines are recommended for all re-development and future development of new tools.

Criteria	Description
Accessible design	All tools must be accessible across mobile, tablet and web devices. It is recommended that the tools and resources meet WCAG 2.0 standards for web accessibility.
Design for Performance	Due to the limited CPU capabilities of mobile devices, the high round-trip times of mobile networks, and the rapid growth of mobile usage the development, the performance of the Online tools and resources must be considered for mobile devices. Similarly, the prevalence of Internet connections using satellites in remote locations, means performance and load time is an important consideration. In order to load a page, the browser must parse the contents of all <script> tags, which adds additional time to the page load. It is recommended that the amount of JavaScript needed to render the page is kept minimal, and parsing of all remaining JavaScript is deferred until it needs to be executed. Most web pages include resources that change infrequently, such as CSS files, image files, JavaScript files, and so on. These resources take time to download over the network, which increases the time it takes to load a web page. HTTP caching allows these resources to be saved, or cached, by a browser or proxy. Once a resource is cached, a browser or proxy can refer to the locally cached copy instead of having to download it again on subsequent visits to the web page.
Standards compliant	All tools must meet HTML standards. This ensures accessibility and consistent experiences across browsers and devices.
Lightweight	Minimise unnecessary media content and enable compression. No use of Flash.
Centralised data mapping	To ensure tools can use common data entered from another tool, all tools must reference a centralised data field mapping table. This will allow new tools to be developed and access data from an existing tool without any re-development.
Security	Personal information must be encrypted with AES256 at the field level in the database. The database itself must be encrypted using Microsoft Transparent Data Encryption (TDE). TDE performs real-time I/O encryption and decryption of the data and log files. The encryption uses a database encryption key (DEK), which is stored in the database boot record for availability during recovery. The DEK is a symmetric key secured by using a certificate stored in the master database of the server or an asymmetric key protected by an EKM module. TDE protects data "at rest", meaning the data and log files. All data connections must be over HTTPS to ensure data is encrypted in transmission.
Integrated	All customer related data should be sourced from and stored in MS Dynamics to ensure data is held centrally.
On Premise	All MLA Online tools and resources must be hosted within the MLA infrastructure to maintain control the technology and data.

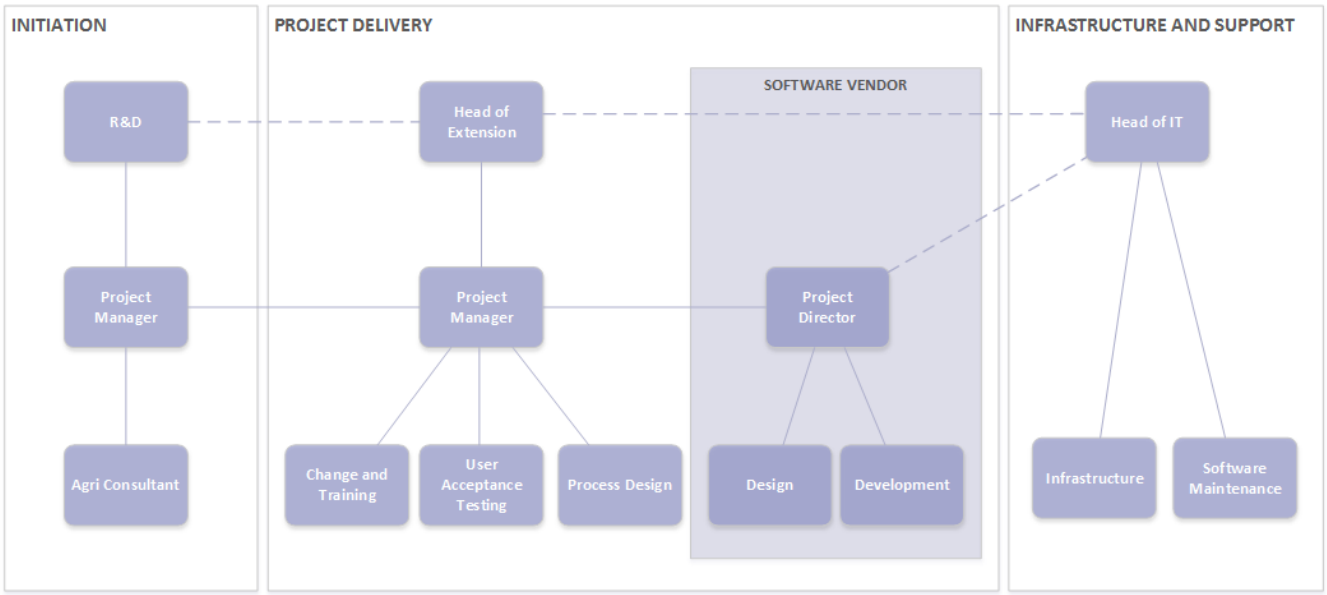
2.2. Governance

Currently the development and implementation of online tools are managed separately within MLA, without a centralised development framework. This has meant that the tools in the past were developed for specific purposes without consideration for how they integrate with other tools or if there are common data fields between the tools that can be used to pre-populate data. It has also meant that no development or user experience standards exists, resulting in tools which don't have consistent designs or approach to data entry.

Structuring Project Teams for Effective Delivery

To enable effective delivery of new tools and resources as well as to ensure consistent design it is recommended that MLA develop a project structure split into three key areas:

1. **Initiation** – responsible for conducting the research and creating prototypes for new tools.
2. **Project Delivery** – responsible for taking the research and designing the business processes, learning courses and online tools to support the research findings.
3. **Infrastructure and Support** – provides IT and infrastructure support for the development of the online resources.



Currently the R&D teams are responsible for much of the development of tools and resources. However, these tools are often developed by agri-consultants, who don't have extensive expertise in software development and user experience standards. It also means there is a lack of consistency and integration between online resources. To overcome this, it is recommended that all development is raised and managed through a single channel as

part of the ICE team. Project initiation may occur from any source, however approval and delivery must be managed through the ICE team.

Under this model, consultants or the R&D team can continue to develop tools but these tools should be considered to be a prototype or a functional model rather than the final tool.
The ICE team should take the outputs of a consultant's work and develop it using the development guidelines and Delivery Model (detailed later in this section).

Outsourcing Development

MLA is not structured to manage ongoing software development in-house due to the number of resources available, rather it is best positioned to provide a support and maintenance capacity for IT assets.

To ensure projects can be delivered effectively within a reasonable timeframe, software design and development should be outsourced but the maintenance of the software should be performed by MLA.

MLA must ensure that for all software developed by a vendor, the source code is provided and a handover to the MLA IT team is undertaken. MLA should impose a 90 day warranty requirement on any new software development. This will provide MLA with certainty of resolution for any unidentified software defects post deployment.

As MLA moves to integrating the online tools and assets into a member hub, the importance of data security becomes greater. Penetration Testing should be performed across all new development by an external vendor. Penetration testing is an analysis of the software for any potential vulnerabilities that could result from poor or improper system configuration, both known and unknown hardware or software flaws, and operational weaknesses in process or technical countermeasures.

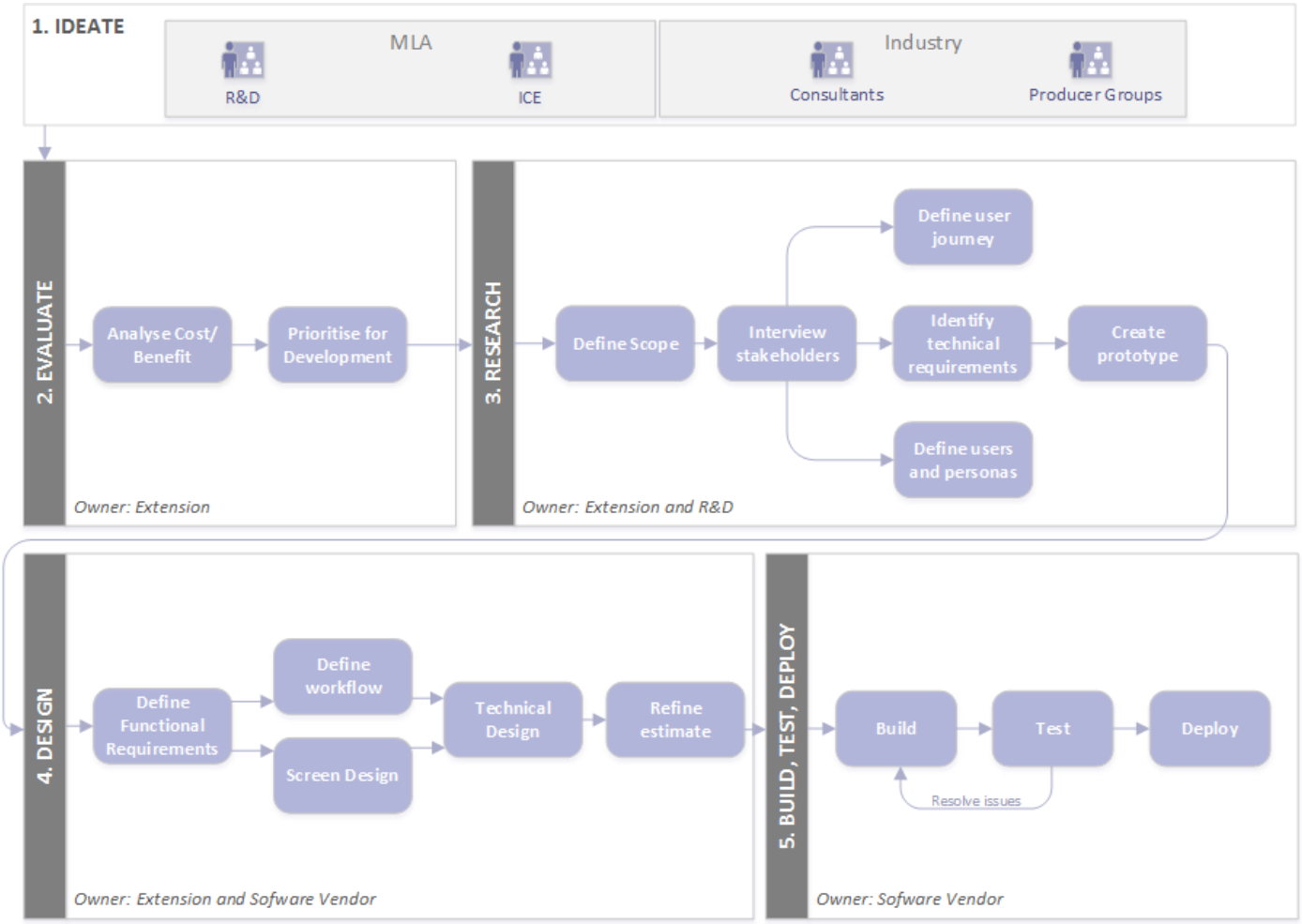
Delivery Methodology

Currently development is often the result of a much broader research project and is undertaken by different departments or teams. Development of online tools and resources must follow a defined delivery methodology to ensure consistency in delivery and appropriate engagement across MLA.

To resolve cases where tools are developed retrospectively as a result of a research project, the development process must be altered to bring the ICE team earlier in the research project cycle. This will enable ICE to identify how to develop online tools or learning assets in conjunction with the research project rather than the research project stipulating this. ICE must be responsible for all online assets and therefore needs to be engaged early and prior to any development by the research teams.

Under the approach detailed below,

1. ***Ideation*** ICE is made aware of research projects prior to them commencing.
2. ***Evaluation***: ICE will then prioritise development based on the project requirements.
3. ***Research:*** In conjunction with the research project, ICE will be responsible for working with the R&D teams to identify the requirements for tools and online assets – leading to a prototype that should be tested with stakeholders and producers. The prototype can be developed by a consultant or by MLA as is currently done.
4. ***Design:*** Once the prototype and research has been confirmed, ICE will commence the design of the online tool with the software vendor, including defining functional requirements, workflow, screen design and technical requirements.
5. ***Build, Test, Deploy***: The Design phase will lead to development by the software vendor and testing by ICE. It is recommended that all newly developed tools or resources are tested with producers or consultants prior to them being deployed.


1. IDEATE
MLA
R&D
ICE
Industry
Consultants
Producer Groups
2. EVALUATE
Analyse Cost/ Benefit
Prioritise for Development
Owner: Extension
3. RESEARCH
Define Scope
Interview stakeholders
Define user journey
Identify technical requirements
Create prototype
Define users and personas
Owner: Extension and R&D
4. DESIGN
Define Functional Requirements
Define workflow
Screen Design
Technical Design
Refine estimate
Owner: Extension and Sofware Vendor
5. BUILD, TEST, DEPLOY
Build
Test
Deploy
Resolve issues
Owner: Sofware Vendor

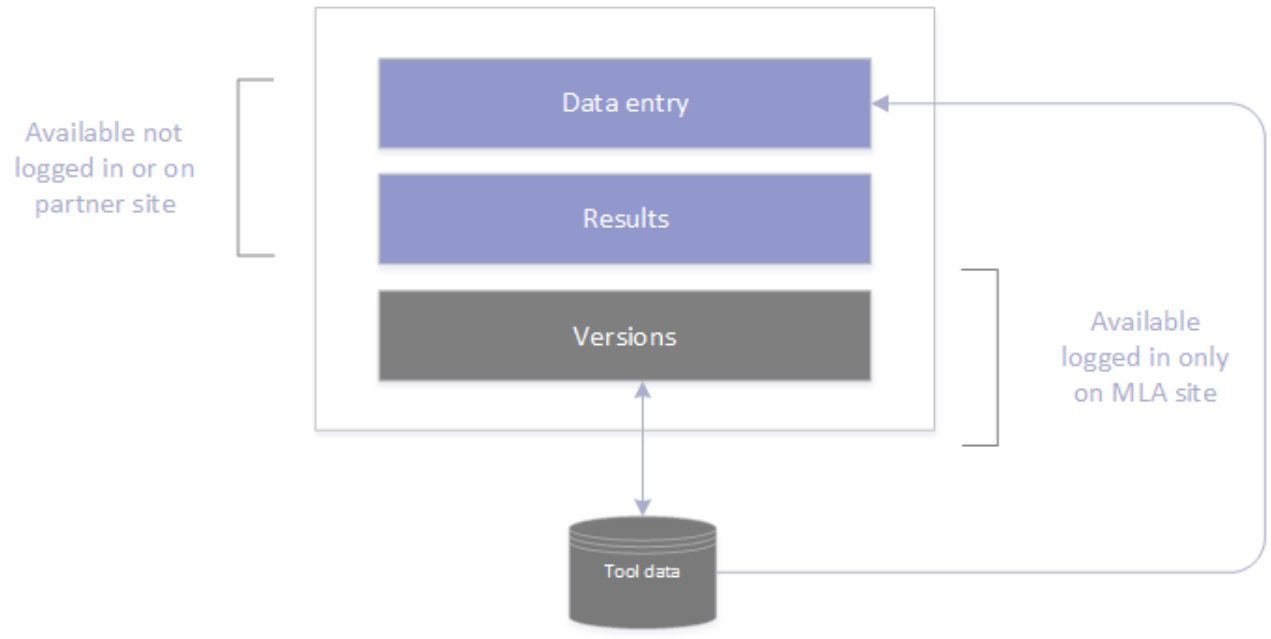
Intellectual Property and Integrating Jointly Developed Tools

Beyond the tools reviewed as part of the scope of this project, it is clear that a significant amount of existing tools have been developed jointly with other organisations. Due to joint-IP, many of these tools cannot be used solely within the MLA website.

To ensure any new jointly developed tools can be used by MLA, MLA must control the development process and host the application.

To support jointly developed tools, Lavender recommends developing the tools in three layers with two states. The first two layers, Data Entry and Results, are available to all users that are not logged in to MLA. By logging in, the tool will expose the third layer, which enables users to access previous versions of the tool's results as well as retrieve data entered from their profile or other tools.

The state-based separation will enable to the application to be embedded externally as an iFrame and control the level of functionality shown when used outside of MLA.



2.3. Member Hub Approach

The member hub is a necessary progression that most producers are expecting from MLA.

The MLA Member Hub is a proposed ICE of the existing Member Profile, with the aim of storing business data about a producer to aid with the completion of online tools and to tailor the online experience for their enterprise.

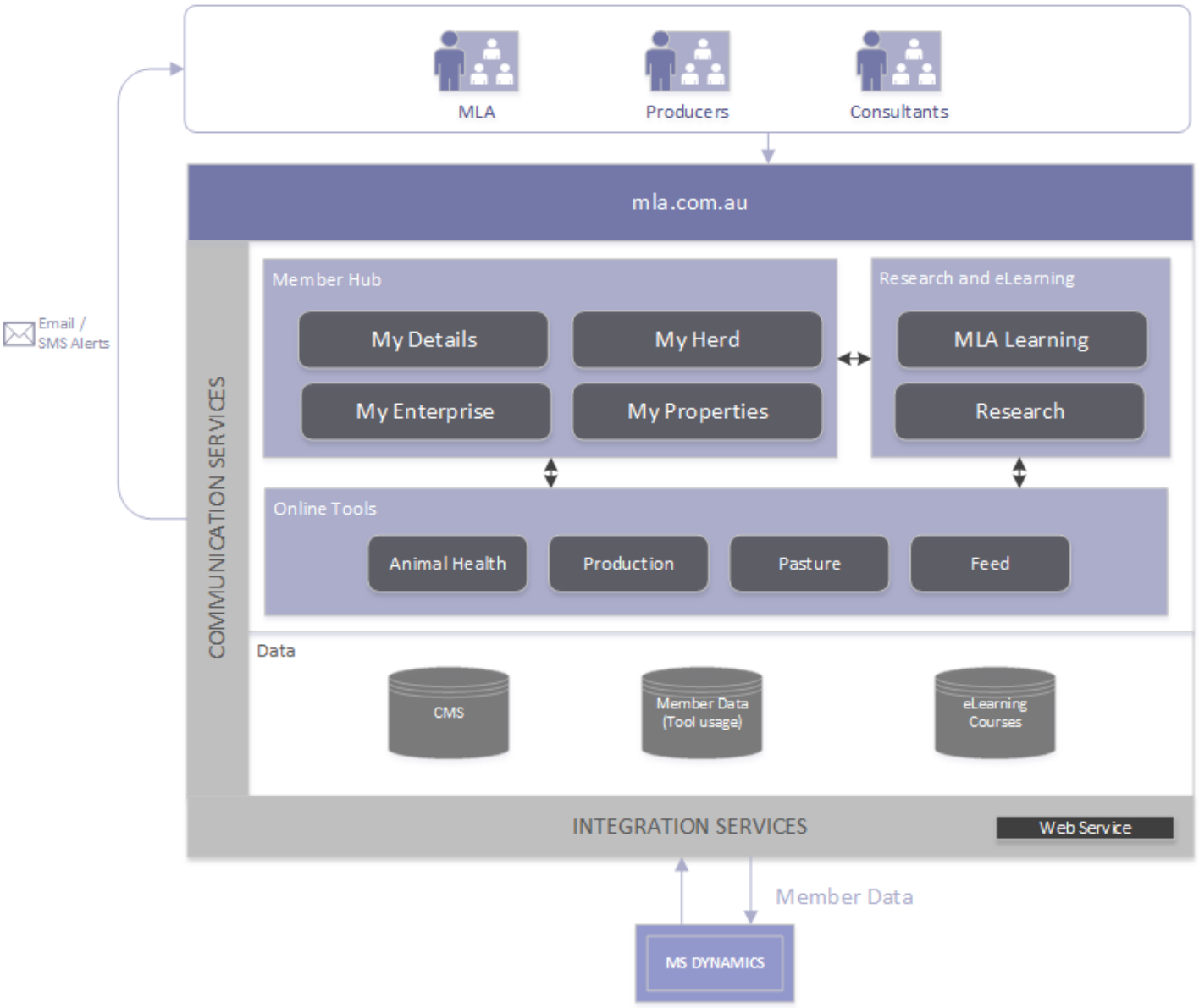
It is suggested that the Member Hub be structured into four key sections:

1. My Details – personal details about the producer.
2. My Enterprise – the type of business the producer runs.
3. My Herd – details about a producer's herd (number of cattle, sheep etc.).
4. My Properties – details of where their properties are located.

The Member Hub would be supported by a suite of online tools and a Research and Learning Centre.

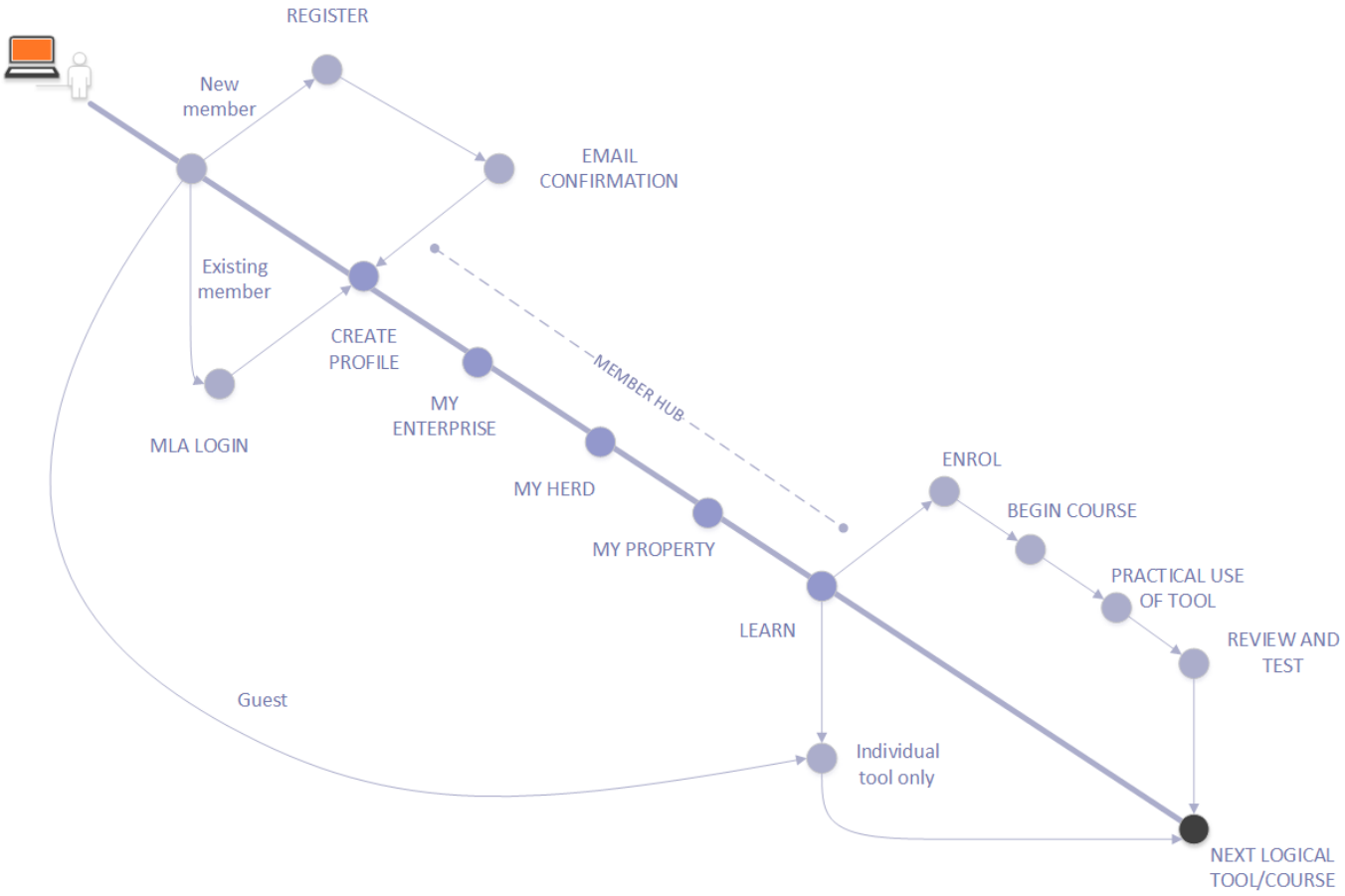
Conceptual Architecture

The diagram below shows the high level conceptual architecture of the Member Hub and the relationship between the online tools and resources:



User Journey

The following diagram illustrates an example of how a Producer could use the Member hub as an integrated Learning environment:



Online Tools and the Member Hub

The data captured through the Member Hub can be used in a number of ways:

1. **Herd data** will be used to pre-populate some of the online tools such as Cost of Production and Feed Demand.
2. **Property information** will be used to display relevant research based on geographic location as well as pre-populate location specific data fields in the online tools.
3. **Enterprise data** (i.e. cattle, sheep and mixed enterprise) shall be used to serve tools that are relevant to the producer's enterprise.

Through the Member Hub producers should be able to access previous versions of data entered into any of the tools they have used.

Producers should be able to:

1. View and edit a version
2. Select one or more versions of a particular tool and compare the results.

Research and Learning

From research conducted, producers expressed an interest in better developing their business practices but questioned the purpose of the tools and often the results.

A wealth of research and insight exists on the MLA website but has not been brought together into a learning framework. Without a structured framework it can become difficult for producers to understand how the Online tools fit into their farm practices and what they can take out of completing the tools.

Content developed by MLA should be structured such that Producers can enrol into courses that develop awareness, provide practical examples and integrate the Online tools into the course structure.

Relevant courses can be provided to the producer based on their enterprise, geographic location, and use of tools or herd.

A Learning Management System based on the Tin Can API (the next generation of SCORM) is recommended to support this functionality.

Data and Integration

All data associated with members should be saved against their record within the MS Dynamics database. Web services should be used as the method to interface through to MS Dynamics. Local data sources will be maintained to manage content and tool specific data.

3. Tools and Calculators

3.1. Overview

To assess the MLA tools for usage, currency and relevance Lavender conducted user research, stakeholder workshops, expert usability, analytics and technical reviews.

This section contains overall insights, recommendations and requirements before delving into each the requirements and recommendations for each calculator.

The table below is an overview of the usability, web usage and recommended actions for each of the tools, in addition to redeveloping them in HTML.

The recommended actions range in severity from a simple update to a more detailed redesign or complete reconsideration before any future development.

Tool	Usability score	Usage	Action
Cost of production	Moderate (56)	High (2/7)	Update
Health cost benefit	Poor (42)	Low (6/7)	Redesign
Disease guide	Poor (48)	N/A	Update
Breeder Mortality	Poor (48)	Low (7/7)	Reconsider
Calving histogram	Moderate (60)	Mid (5/7)	Redesign
Feed Demand	Poor (34)	Mid (4/7)	Redesign
Stocking rate	Moderate (61)	High (1/7)	Update
Rainfall to Pasture Growth	Moderate (50)	Mid (3/7)	Reconsider
Cattle parasite atlas	N/A	N/A	Update

During the research and expert review there were a number of insights and recommendations and requirements that were consistent across all of the tools:

Key insights

- The tools appear to cater to any audience, but no single producer could use them all. This is a problem, as producers who use tools that are not appropriate to their circumstances will come up with the wrong outcomes. Similarly producers are not immediately aware of which tools are suitable for their enterprise causing confusion.
- The tools appear to be more technical than they are actually are, so producers think they were designed for larger operators to make strategic decisions.
- Too many of the MLA tools are just “calculators” i.e. they only perform a mathematical operation – they do not help producers make a decision.
- The tools treat all ‘inputs’ equally, i.e. they act as if smart defaults are just as likely to be entered as user inputs. This means that producers are overwhelmed by inputs and uncertain by those they don’t know how to answer.

Recommendations

- Simplify the tools and make them less technical so that smaller producers can use the tools to make day-to-day decisions.
- Increase the scope of the each tool so that they cater to the widest possible audience. Redesign the “all tools” page and include a new introduction page so that tools that cannot cater to every audience are easy to identify.
- Ensure it is clear what decision each of the MLA “tools” can assist with and provide results that are easy to interpret and further guidance on what next steps to take.
- Display only those inputs that we expect producers to enter on the main interface so that it is clear what are the user inputs and what are the smart defaults.

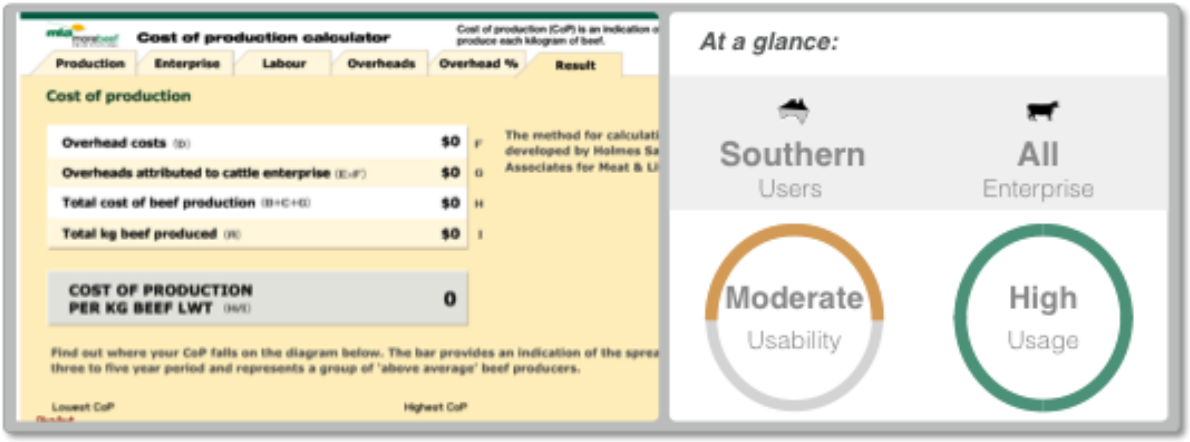
User requirements

ID	Section	Issue	Action	Severity
1	Instructions	Tools do not have instructions and are not clear on who they are designed to help.	Include a set of instructions that clearly states what the tool does and who it can help.	High
2	Inputs	Producers cannot import information.	Allow producers to import information. Lavender recommends allowing producers to upload a CSV or text file and allowing the producer to map fields from the file to the tool.	Low
3	Inputs	Field placement and label alignment forces you to move all over the screen to fill out the form.	Ensure that label alignment is consistent.	Medium
4	Help	Help is too long and difficult to understand.	Ensure that help content is written in plain language.	Medium
5	Help	Help is not available for all calculators.	Ensure that help is available for each calculator.	Very high
6	Help	The way help can be accessed is inconsistent and not common practice, e.g. “*” or by hovering on a heading.	Ensure that help is accessed through a clearer more common symbol such as (?) or (i).	High
7	Results	Results are not distinct from the inputs.	Ensure results are separated from inputs with a clear call to action.	Medium
8	Results	Results do not help producers make a decision.	Ensure results can be easily interpreted and include next steps and other relevant content.	
9	Results	Producers cannot export/share results.	Allow producers to export/share results.	Medium

ID	Section	Issue	Action	Severity
10	Results	“Save” does not appear to work.	Ensure that all calculators allow for saving results and inputs. Include feedback that save has occurred. As part of the Member Hub, data held on the tool should be made accessible so producers can access previous entries.	High

3.2. Tool and calculator recommendations

Cost of Production (Beef and Sheep)



Findings:

- Most producers don't know what "cost of production" means, let alone how they might work it out.
- More savvy producers have their own tools for calculating business efficiency and use alternative measures such as 'gross margin'.
- Most producers thought the Cost of Production tool was simple and important.
- Some "Northern" producers thought it wasn't comprehensive enough, "for us there are too many variables our animals jump out and in it just seems that it would be a bit inaccurate."
- Some thought the tool could be more flexible / that they could customize more.
- Most wanted to be able to try out different "what if" scenarios.
- It was noted that the benchmarking at the end of the tool is out of date.
- There was some concern by consultants that you can't export/email it.

Key insights:

- The average producer will not be able to calculate their cost of production using their books. This is because they do not record the "weight of beef produced" in their books. So in order to get a cost of production they need to change the way they keep their records.
- There is a big risk of 'double counting' when using this tool, i.e. when they entered the same cost twice in different tabs.
- Providing a 'Cost of Production' is not enough of a result to make this a 'tool'. Producers need to be given more guidance on how to interpret the results and how to use them to improve their business.

Recommendations:

- Keep this tool because it is relevant with high usage but the results need to be updated to make it more current.
- Expand the tool so that "Northern" producers can use it accurately.
- Consolidate the Beef and Lamb calculators.

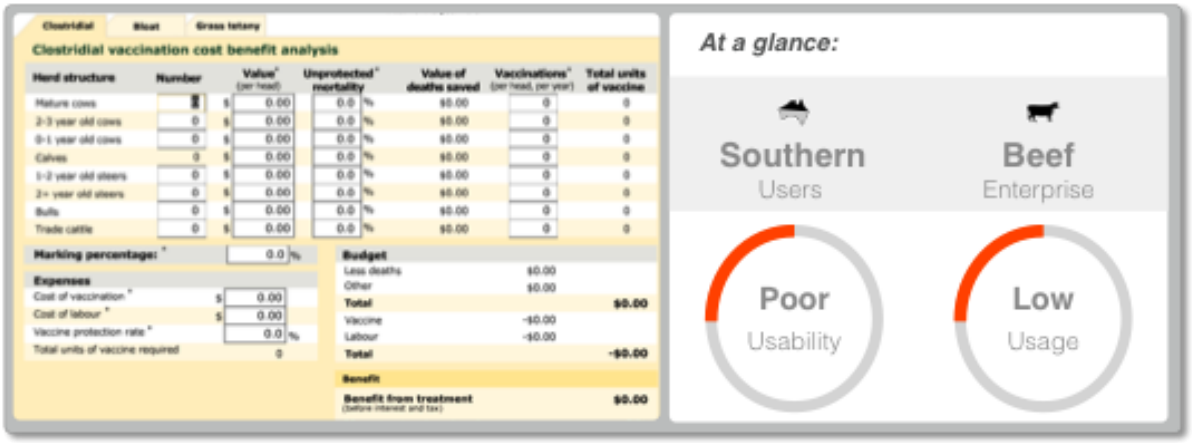
- Update the interface to make it easier to use and enhance the results so that producers can analyse each cost category and perform “what ifs” (scenario planning).

User requirements:

ID	Section	Issue	Action	Severity
11	Instructions	Producers are not aware that you need to know things that are not in their tax return, such as “the total weight of cattle sold”.	Inform producers they need this figure before they start using the calculator and advise ways they could use the tool without it.	High
12	Inputs	The tool shows unnecessary calculation formulas beside fields as roman numerals.	Do not show cell formulas onscreen, if necessary place this information inside help.	Low
13	Inputs	The tool requires producers to enter in costs individually that they may have collectively in their tax statements.	Allow producers to enter in cost totals.	Med
14	Inputs	The overhead % figure is too broad and can lead to incorrect results.	Allow producers to allocate each overhead towards a %.	Med
15	Inputs	“Quantity” is misspelled in “total qualtity of home grown feed fed out” and in “total qualtity of purchased feed fed out”	Fix typos.	Low
16	Inputs	Some input fields that appear as totals such as “selling costs” are made up of a number of different inputs, so producers have to add these up before entering this input.	Allow producers to add fields below certain totals.	Low
17	Inputs	Producers did not correctly estimate “Percentage time on cattle/sheep work” on the “Labour” tab, because they thought it did not include time spent on overheads.	Use help and better labeling to ensure that producers enter the correct labour costs.	High
18	Inputs	“Mth” is ambiguous in “Opening number Mth” of the Beef calculator.	Remove abbreviations that are not immediately clear.	Low
19	Inputs	The default number “0” in calculator input fields does not clear when producers try to enter inputs.	Ensure that defaults are cleared when producers try to enter inputs.	Low
20	Inputs	“Calves” is confusing because producers thought this field would always be zero.	Ensure that producers know how to enter stock numbers.	High
21	Inputs	Inputs in the “Overheads” tab do not include fields that producers might need such as	Allow producers to name and add their own fields.	Medium

ID	Section	Issue	Action	Severity
		land costs, utes.		
22	Inputs	“Lamb opening liveweight” was not something that some producers know how to enter.	Ensure that inputs are clearly distinguished from default settings.	Medium
23	Inputs	“Lamb closing liveweight” is usually a range of numbers.	Ensure that producers know how to enter a closing liveweight.	Medium
24	Inputs	“Total lamb opening value” in Lamb CoP should be “Total lamb closing value”	Fix typo.	Low
25	Inputs	Entering a wage into “Owner/operator allowance” is a concept that many producers do not understand.	Make it clear that they need to include a wage for themselves.	High
26	Help	Automatic help is unnecessary and distracting, as it is likely this tool will be used more than once.	Change help to be user activated.	Medium
27	Help	Help text gets in the way of other inputs.	Ensure that help does not cover other key inputs.	Medium
28	Results	The results do not show areas where producers can improve.	Show totals for each section to show producers the impact	High
29	Results	Benchmark in results is out of date.	Update benchmarks.	High
30	Results	Benchmark in results refers to “efficiency” which is too emotive and possibly inaccurate.	Remove reference to “efficiency” and refer only to the numbers of producers with particular Costs of Production instead.	High
31	Results	Results do not show what inputs have the most impact.	Show which inputs have the most impact on their results.	Very High

Health cost benefit calculator



Findings:

- Most producers did not think this was a useful tool because vaccinations are either a 'no brainer' or they are not an issue.
- This tool has the highest bounce rate out of all MLA tools which suggests that producers expect this tool to offer more than it does.
- Sheep producers seemed to have bigger concerns over health costs and they showed an interest in having a tool like this.
- Research staff believed that it could be more effective by considering more diseases and showing the impact of a catastrophic event.
- Producers did not know how to calculate the "unprotected mortality rate" without conducting their own study and they deemed this to be risky and did not make business sense.

Key insights:

- Producers were more familiar with the terminology of actual treatments they use, such as "5-in-1" rather than diseases like "clostridial". This suggests that it may be missing the target audience.
- Producers want to assess how cost effective their health program is as a whole, so they can decide whether they should be investing more or less for instance measuring the benefits of a "5-in-1" versus a "7-in-1" vaccination.
- Producers currently use the tool 'backwards' by entering vaccination costs and working out what the unprotected mortality rate needs to be in order to break even.

Recommendations:

- Redesign this tool because it is relevant but usage is low and it is not very useful in its current format.
- Expand the tool to include common sheep vaccinations so that it reaches a wider audience.
- Ensure the treatment options included match those most commonly vaccinated and if necessary expand the number of diseases covered by the tool.
- Consolidate the costs across the tabs so that producers can see the results of their health program as a whole.

User requirements:

ID	Section	Issue	Action	Severity
32	Inputs	Unprotected mortality is not a field that many producers would be able to enter.	Either default this number or change the calculator so that it does not rely on this figure.	Very High
33	Inputs	There is a lot of technical language that producers may find confusing, e.g. “marking percentage”	Make the tool more accessible with plain language and explanations.	Medium
34	Inputs	In the % fields you can add more than 100%.	Restrict input to 100%.	Low
35	Inputs	Order of entering calves through “marking percentage” is confusing.	Allow producers to enter calf numbers after cows.	Low
36	Inputs	There needs to be more smart defaults e.g. Protected mortality, vaccination costs, treatment options	Ensure that default fields are available where possible.	Medium
37	Inputs	In the Grass Tetany tab, the “at risk mobs” help says that only “lactating cows are at risk”. But you can still tick animals that are not at risk.	Use smart defaults and advanced settings so that producers don’t accidentally include mobs that are not at risk.	Medium
38	Help	Help text is not helpful if it is just the input label reworded e.g. “marking percentage”.	Ensure help text is helpful and written in plain language.	Medium
39	Results	Results are displayed as “marginal return” which makes them more difficult to interpret.	Results should be stated in terms of acceptable levels and include a clear explanation what the results mean and how they can be interpreted. So If under 30% is unacceptable then the result should be “unacceptable” not the number.	Very high
40	Results	The “other” total does not appear to do anything.	Remove it.	Low
41	Results	In the “Bloat” tab it is not clear how “Extra value” is derived.	Ensure that all results are clear and transparent.	Medium

Cattle disease guide

Findings:

- Most producers thought this tool was pretty useful but there wasn't a lot of enthusiasm for it given the number of online alternatives.
- There was some concern about wrongly diagnosing diseases.
- Many were amused by some of the clinical signs.
- The tool was not thought to be useful for the larger scale operations where animals are not monitored as closely.
- It is very hard to find diseases because you have to enter the clinical signs or a keyword first.

Key insights:

- Producers currently use everything from google to Facebook to help them with health issues. So a tool like this that comes from a credible source could be incredibly valuable.
- There are usability issues that stem from the layout of key information in this tool. The biggest issue is there are far too many inputs on screen and the results are hidden.

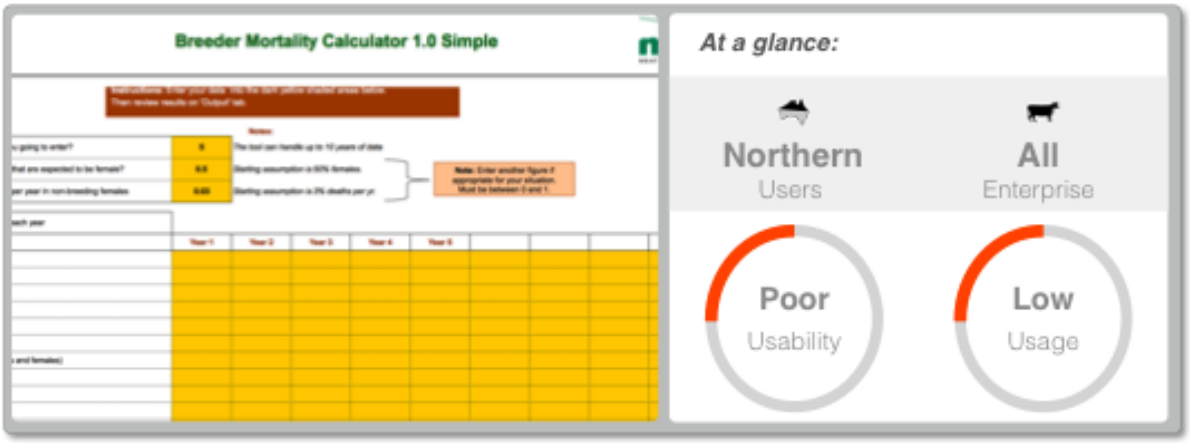
Recommendations:

- Make this tool available on the MLA site because it is relevant and current for producers.
- Ensure that it links to the health cost calculator.
- Update the interface to make it easier to use. Lavender suggest a more staged approach starting with broader categories and then drilling down to specific clinical signs.

User requirements:

ID	Section	Issue	Action	Severity
42	Instructions	There is a choice of 3 primary actions, the animal age, entering the clinical signs or using a keyword – and this is a bit overwhelming.	Ensure there is a single primary action to begin using the tool.	Medium
43	Inputs	The search button for the 'clinical signs' is hidden below the list.	Ensure the search button is clearly visible.	High
44	Inputs	List of symptoms is overwhelming.	Ensure that list of symptoms is progressively disclosed under categories.	High
45	Inputs	It is not possible to search for diseases directly.	Allow search for diseases in the "keyword" search.	Medium
46	Inputs	"Clear selection" link is placed above search button.	This link should be placed alongside the search button or removed altogether.	Medium
47	Help	Symptoms do not contain help on how they can be observed.	Include help/imagery on symptoms that are unclear.	Medium
48	Results	All diseases are shown before any inputs have been entered.	Hide results until inputs have been entered.	Medium
49	Results	When you press 'search' the page reloads so that results are hidden offscreen.	Ensure that results are clear and distinct from inputs once the search button has been pressed.	High
50	Results	Results are too technically worded.	Ensure that results are written in plain language.	Medium
51	Results	Results do not contain visuals.	Ensure that images and visuals are used to improve the understanding of results.	Medium
52	Results	Search results in the keyword search do not allow for potential user typos.	Include did you mean "x" in the results.	Low
53	Results	Results do not show the total number of relevant diseases.	Include the number of potential diseases in results.	High

Breeder mortality



Findings:

- Most producers did not think this was a valuable tool.
- Northern producers thought that mortality rates were important to know but something they could estimate with their books already.
- Southern producers said they already knew their mortality rates.
- Producers thought once they know their mortality rates they would not need to use this tool.
- Some were concerned about recording these numbers in case protection agencies came after them.
- This is the lowest ranked tool by far with only 1% of the total page views.
- One participant thought that mortality rates could be benchmarked to provide industry comparison.

Key insights:

- Northern producers do not realise their mortality rate estimates are inaccurate. So the true value of this tool is lost on the target audience.
- Southern producers are more concerned with sick animal rates than mortality rates.
- There is a stigma attached to mortality rates and this leads to reluctance in recording them.

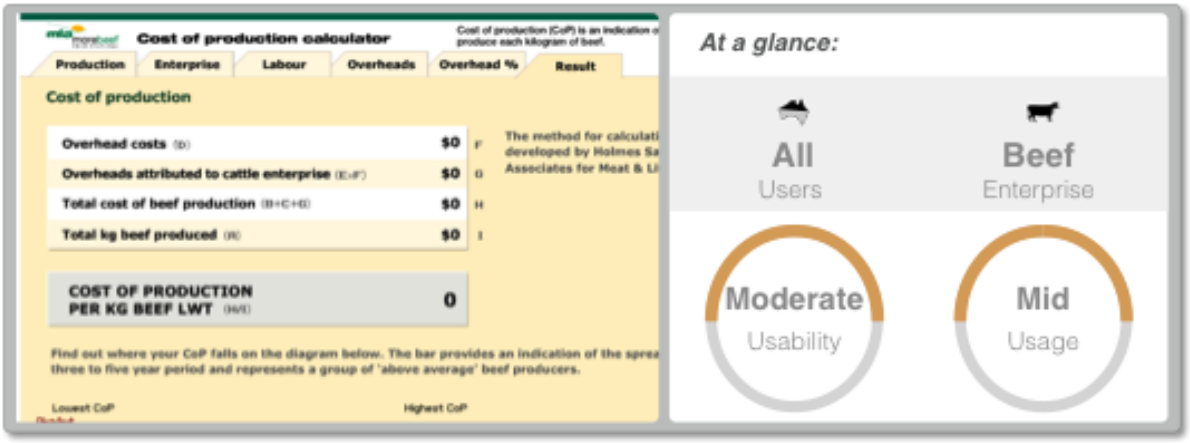
Recommendations:

- Reconsider this tool from the site because it is not highly relevant and it has very low usage so it may not be worth the cost to develop it into a new framework.
- Consider consolidating mortality rate costs into the health cost calculator.

User requirements

ID	Section	Issue	Action	Severity
54	Inputs	Producers are asked to enter the settings for the form before they start with inputs, which is unexpected.	Change the order of inputs.	Medium
55	Inputs	Producers are asked to enter the “expected proportion of deaths per year in non-breeding females.” Which is not something that a producer is likely to know.	Include this input in an advanced settings area.	Medium
56	Help	Help is contained in a separate booklet when inline would be more effective.	Include user activated inline help.	Medium
57	Results	Results are too overwhelming, they include a summary of the entered data and the calculations which are unnecessary.	Show a clear hierarchy of results with a clear primary result and secondary one. Hide the rest.	High
58	Results	There is no guidance on what the results could mean.	Include some sort of benchmark so that producers can gauge what their results mean.	Very high
59	Results	There are no next steps or suggestions on how to reduce mortality rates.	Include some of the “proven strategies” to improve mortality rates so that producers can make necessary changes.	Very high

Calving histogram



Findings:

- Most producers thought this was a useful tool for those who don't have their calving cycle right or who aren't familiar with the concept of tight calving.
- Some producers thought it could be more useful if it was linked to financial data.
- Some producers thought it would be useful to link it to geographic areas (e.g. spring calving for some areas is more prevalent than others).
- Research team members thought it could include more of the management/planning features like the 'lambing tool'.

Key user insights:

- This is a simple 'calculator' when producers need a 'tool', i.e. something that helps them make a decision, because there are a lot of issues around when the best time of year is to do their calving.

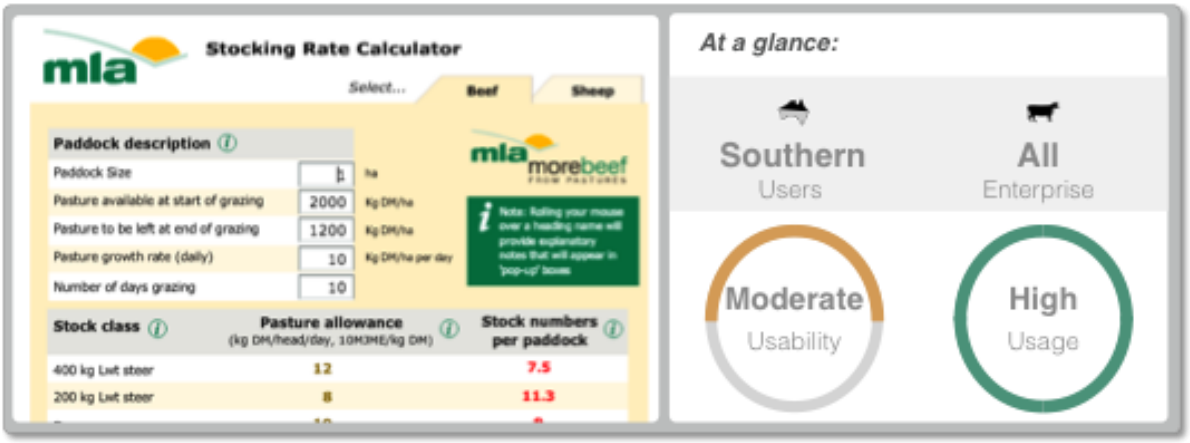
Recommendations:

- Redesign this tool because it is relevant and current but the usage isn't high so it needs more useful.
- Ensure that terminology and inputs are consistent with the 'Feed Demand' calculator.
- Use geographic data for smarter defaults.
- Update the interface to make it easier to use and enhance the results so they are linked to financial information and producers perform "what ifs" (scenario planning).

User requirements:

ID	Section	Issue	Action	Severity
60	Instructions	The title of this tool does not clearly indicate what it does.	Change the title of the calculator so that it places less emphasis on “histogram” which is not a common term.	Medium
61	Inputs	Producers are asked to enter the mob name and settings before calving, which is unexpected.	Change the order of inputs and include an advanced settings area.	Medium
62	Inputs	Calving cycles are not editable.	Include calving cycles in advanced settings area to allow producers to edit calving cycle lengths.	Low
63	Inputs	Gestation cycle is not something that producers will always change.	Include in advanced settings area.	Low
64	Inputs	The tool does not have default calving periods.	Include default calving periods for different regions. This will help beginners improve their calving.	Low
65	Errors	You can enter letters and other invalid characters into input fields without getting an error message.	Ensure that potential user errors are prevented.	Low
66	Help	Calving cycle length is not immediately evident.	Clearly explain the length of cycles.	Low
67	Results	The key concept of the tool i.e. tight calving is not clearly explained or evident when using the tool.	Ensure this key concept is clearly explained.	High
68	Results	Results are not given any meaning or context.	Ensure that it is clear what the calving pattern may mean.	Very High
69	Results	Language is too technical, e.g. “theoretical” and “histogram”.	Use plain language to describe elements of the tool such as “target” and “graph”.	Medium

Stocking rate calculator



Findings:

- Most producers really liked this tool for its depth and simplicity, “If it is done right it is huge – we need to know how much is left and what not to eat and what to eat – based on a cell grazing strategy”.
- It was not useful for producers who move their cattle a lot or those who conserve fodder.
- There was some requests to be able to customize it further – particularly the stocking class.
- Some producers thought it would be useful if the tool allowed you to increase the weight of stock classes, “you might allocate energy for them to grow from 200kg to 250kg”.
- There was some concern that the pasture fields in the paddock description may be difficult to enter.
- It was noted that it would be good if there was a way to pick up the output from the “Feed Demand” tool, specifically for pasture growth rates.

Key insights:

- Producers who have a fixed mob structure want to know how many days they can graze a paddock not the stock numbers per paddock.
- Producers have other goals that they are considering when they stock their produce such as how to grow the animals.

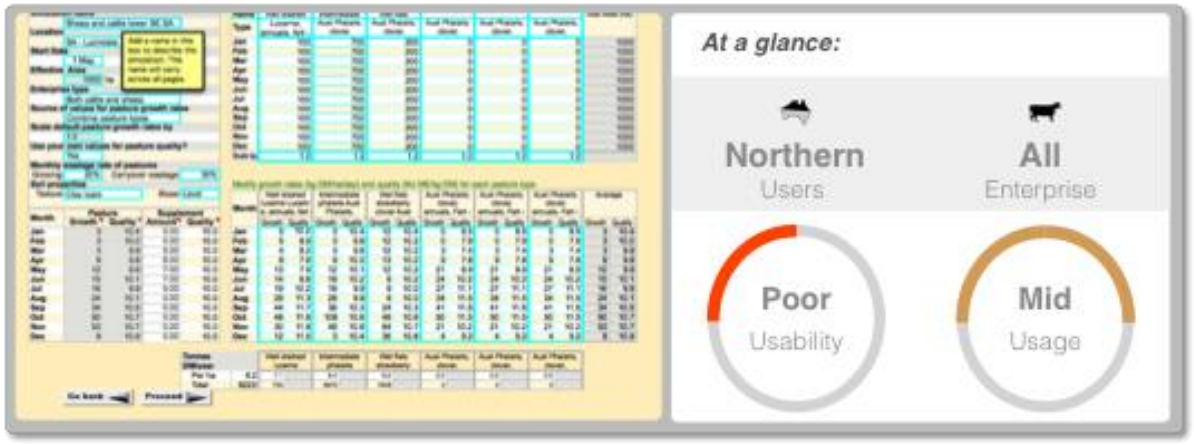
Recommendations:

- Keep this tool on the MLA site because it is relevant, current and it is has very high usage.
- Consolidate beef and sheep tabs into one tool.
- Ask for geographic data so that pasture information can be a smart default. If available this data could be derived from the Member Hub.
- Allow more flexibility and control over the inputs and defaults.
- Update the interface to make it easier to use and enhance results so that producers can perform ‘what if’ scenarios and those with fixed mobs can calculate the number of days grazing.

User requirements:

ID	Section	Issue	Action	Severity
70	Instructions	There is no clear starting call to action.	Include a clearer starting screen to choose between sheep and cow.	Medium
71	Inputs	Link in the help text next to paddock description to More beef from pastures is broken.	Fix this link.	Low
72	Inputs	Producers cannot customize their pasture allowance and stock classes.	Allow inputs for stock class and pasture allowance in advanced settings to make it more flexible.	Medium
73	Inputs	“Pasture available”, “pasture to be left” and “pasture growth rate” are not something that many producers will know how to enter.	Include more smart default options for pasture growth rates based on region.	Very high
74	Inputs	The results dictate a number of animals to put in the paddock instead of allowing producers to keep their existing mob structure.	Allow producers to get a length of time as a result instead of the stock number.	High

Feed demand calculator



Findings:

- Most producers liked the idea of this tool but thought it was difficult to use.
- The average producer is looking to know how they will fill the “winter gap” and most producers will have a gut feel of this so they didn’t think it would be that useful.
- There were several key fields that producers thought they would have trouble entering.
- One producer thought it would be useful when thinking about changing the time of calving.
- The ICE team believed that this tool was unnecessarily complex. There are lots of interface issues with this tool. There is so much information in this calculator it is beyond overwhelming.
- This tool scored the lowest in the expert usability review.

Key insights:

- This calculator does far more than show producers the pattern of feed supply and demand – it is a strategic decision making tool.
- It its current format this tool is far more in-depth and scientific than the average producer needs it to be.

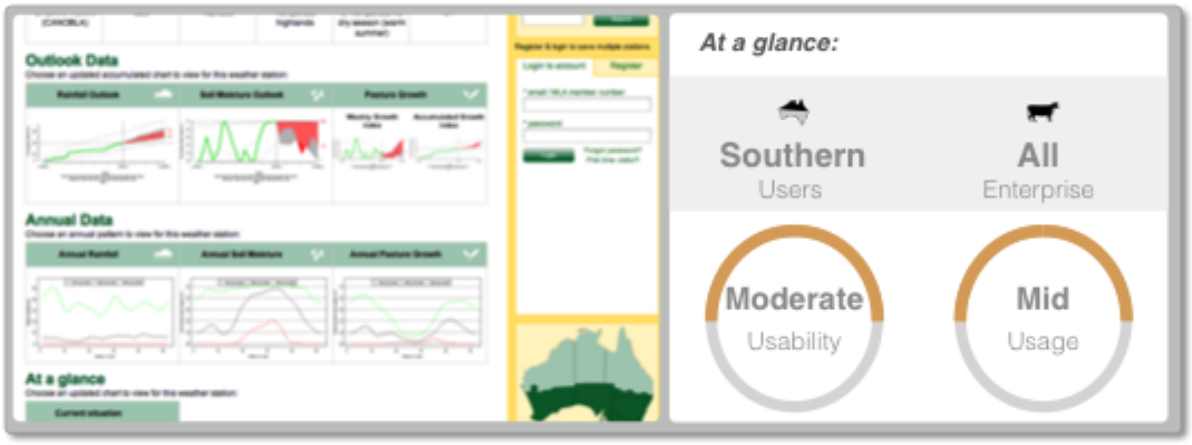
Recommendations:

- Redesign this tool because it is relevant with fairly high usage but it is too hard to use.
- Expand the tool so that Northern producers can use it.
- Simplify this tool by hiding most inputs and options in an advanced settings section.
- Update the interface to make it easier to use and strip back the results so that producers can interpret them more easily.

User requirements:

ID	Section	Issue	Action	Severity
75	Inputs	Tool starts with “simulation name” which is not what the user is expecting to enter	Ensure the tool begins with a question that producers are expecting	Low
76	Inputs	The smart defaults are in place everywhere so there is no real way of knowing what is your information and what is a default.	Hide everything except the most important information and include the rest in advanced settings.	High
77	Inputs	“Use your own values for pasture quality” is set to “yes” by default.	Change this to “no” so that producers are not overwhelmed with information.	High
78	Inputs	The pasture growth rate and the “monthly wastage rates of pastures” are key cells that most producers wouldn’t know what these figures are.	Include smart defaults for these.	High
79	Inputs	Cattle and Sheep tabs include head of stock graphs.	Remove or hide these graphs or include in another tool as they are no relevant at this point in the tool.	High
80	Inputs	“Effective area” is a locked cell when the producer starts using the tool	Ensure that locked cells are clearly explained.	Low
81	Help	Help text is hard to remove because it is automatic and it covers other inputs.	Ensure that help is user activated.	Medium
82	Results	The different colours on the graphs are hard to differentiate.	Ensure colours used in the graphs have proper contrast.	Low
83	Results	The results are difficult to interpret and overly detailed at a first pass.	Simplify results so that more detailed elements such as feed type and animal breakdown are available as an additional option.	Very high

Rainfall to Pasture Growth Outlook tool



Findings:

- Opinion was mixed as to the value of this tool. Some thought it would be a good tool to run some what if scenarios, others thought that this tool didn't give them anything they didn't already know.
- Some thought there were better third-party tools out there than this one.
- Some didn't think it would be useful because they need a 12 month prediction to make strategic decisions
- Most producers thought it was too complex to use effectively.
- There was concern there was no allowance for soil fertility
- There was some concern by ICE staff that the language used in the tool is not consistent with other MLA tools such as the Feed Demand calculator.
- There was concern that the tool uses an "index" rather than real data.
- This is the most expensive tool for MLA to maintain due to external data licensing.

Key insights:

- This tool can only be used to make sound decisions if you have an advanced understanding of statistics.
- In terms of usability the key issues come from interpreting the information you are given which is very complex. The graphs used are far too technical and scientific, there are no beginner or intermediate information; this is a tool for experts only.

Recommendations:

- Either simplify this tool to show or reconsider it altogether as it is too complex to use and too costly to maintain.

User requirements

ID	Section	Issue	Action	Severity
84	Instructions	It seems like you have to login and producers having to create a login is a barrier to using the tool.	Make it clearer that a login is not required.	Low
85	Instructions	There is no clear CTA to commence using this tool so as a result it is quite confusing at first.	Needs a clearer opening screen that shows what the first action is.	Low
86	Results	Language is not consistent with the Feed Demand calculator.	Ensure that language is consistent with Feed Demand calculator.	Low
87	Results	The graphs are too small and hard to read.	Increase the size of the graphs and allow producers to zoom in.	Medium
88	Results	Graphs and results are difficult to interpret because they use complex statistical metrics such as “indexes”.	Ensure that unnecessary statistical complexity is simplified.	Very high
89	Results	PDF export is only a screenshot of the results page.	Change to show all details.	Medium

Cattle parasite atlas

Insights:

This tool was seen as something that a new producer moving to an area might need, but those in the area would know what sort of parasites they have.

Recommendations:

- Lavender recommend bringing this tool online rather than having it as a PDF download.

ID	Section	Issue	Action	Severity
90	Instructions	Title of tool does not fully describe what the tool does.	Change the title so that producers know they can access other information through the tool such as production systems.	Low
91	Inputs	It is not obvious enough that you need to scroll over the map and choose a location.	Needs simpler instructions and hover states for the map so that it is clear you can click on areas of the map.	Medium
92	Results	Results are only available in a PDF.	Allow results to be viewed online in an interactive format.	High

4. Appendix

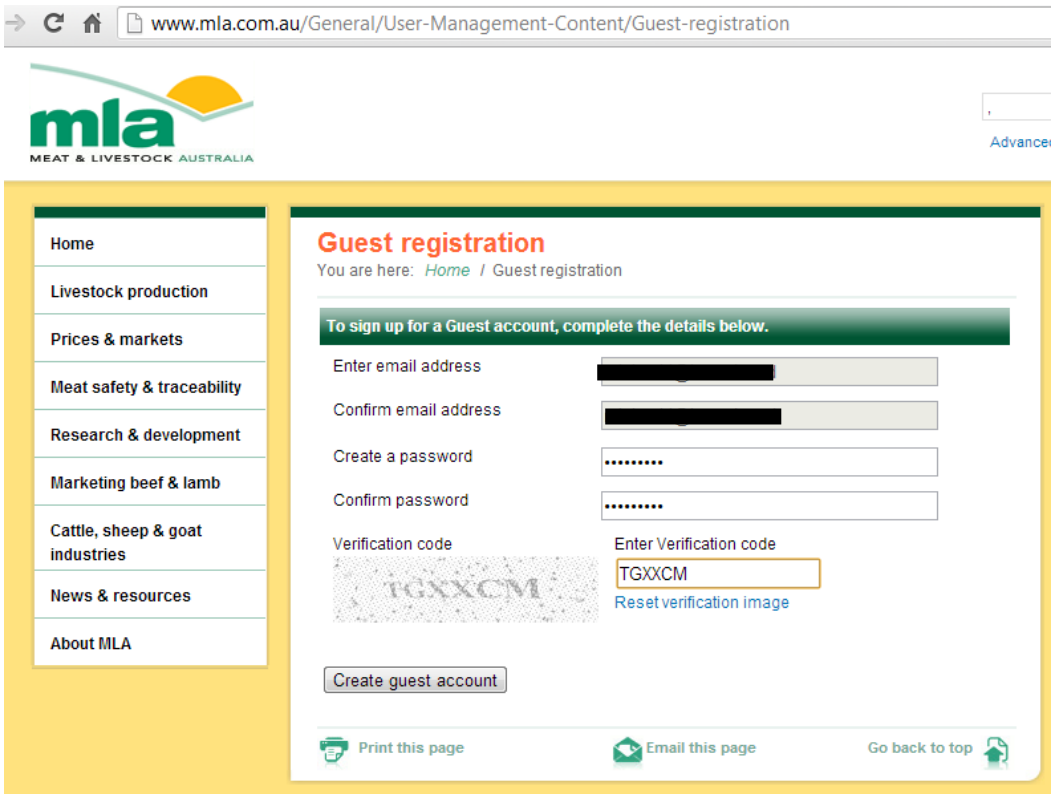
4.1. Existing Member Profile

The following section highlights issues with the current Member Profile. It is recommended that all issues are resolved prior to or as part of the Member Hub development.

CRITICAL SECURITY: No SSL on registration / log in / member profile

SSL is not in place on the following user profile pages. SSL is required to prevent data being intercepted and read:

- http://www.mla.com.au/General/User-Management-Content/First-time-user
- http://www.mla.com.au/General/User-Management-Content/Guest-registration
- http://www.mla.com.au/General/User-Management-Content/My-details
- http://www.mla.com.au/General/User-Management-Content/Change-Password
- http://rainfall.mla.com.au/Station/AllLocations



IMPORTANT DATA INTEGRITY: No Email address verification

No email address validation exists on the current guest registration process. This may lead to emailing people who didn't request an account or sending email to an invalid address (which is an unnecessary cost)

Wed 12/06/2013 10:02 AM

noreply@mla.com.au

Meat & Livestock Australia - New guest web account confirmation

To Michael Langley

Dear MLA web user,

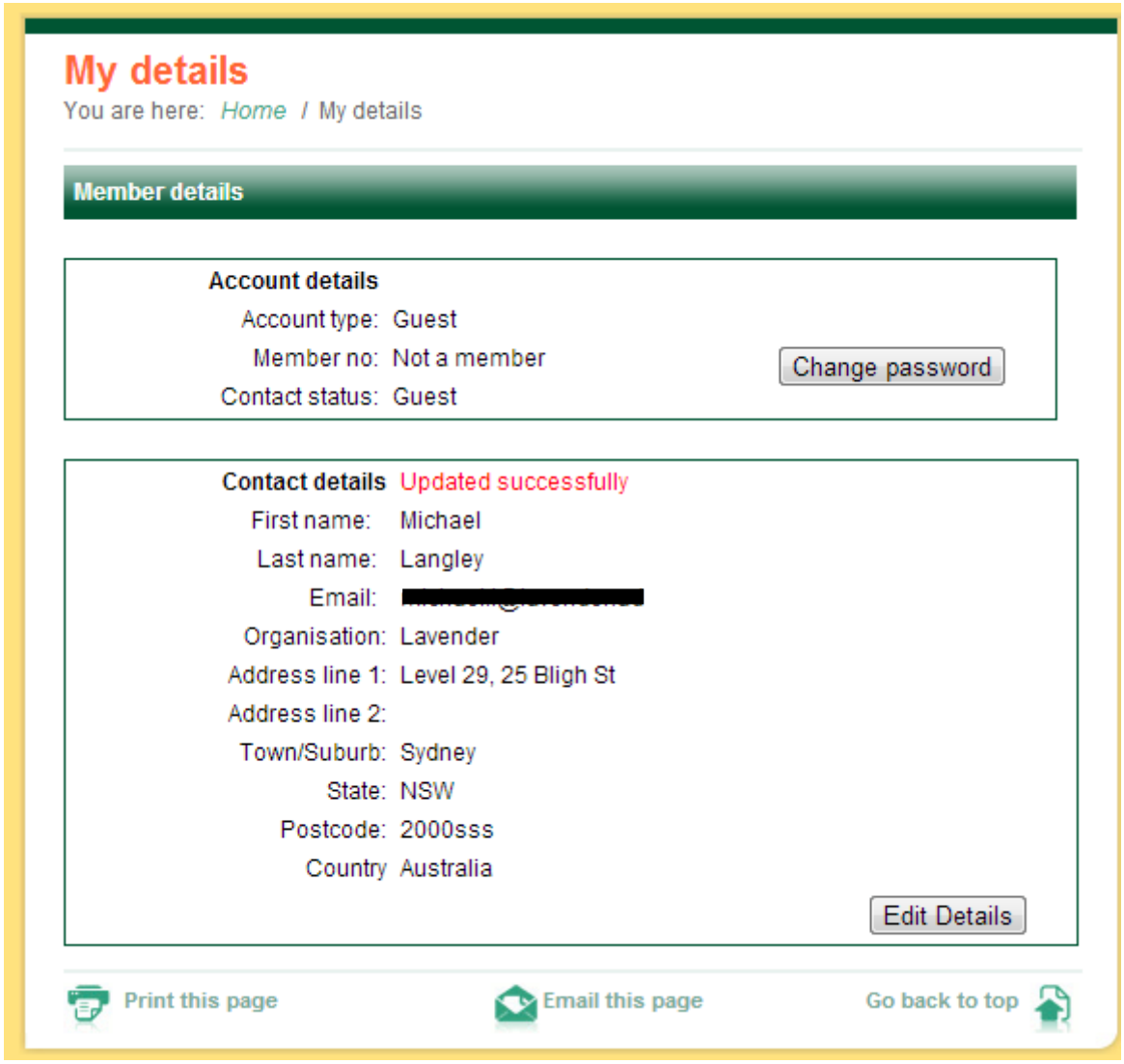
These are your login details for the MLA website

Username : [redacted]
Password : [redacted]

Thank you,
MLA member services

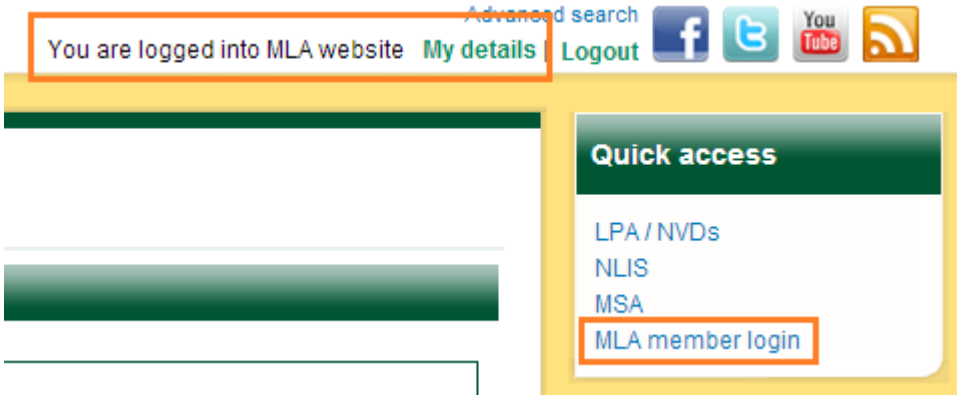
IMPORTANT: DATA INTEGRITY

Invalid postcodes can be entered and saved. No matching between suburb and postcode. No re-validation on email address change.



LOW USER EXPERIENCE: Message not changing when logged in for Quick Access

"MLA member login" should switch out to "My details" when the user has logged in.



IMPORTANT SECURITY: Paid publications can be distributed if the link is known

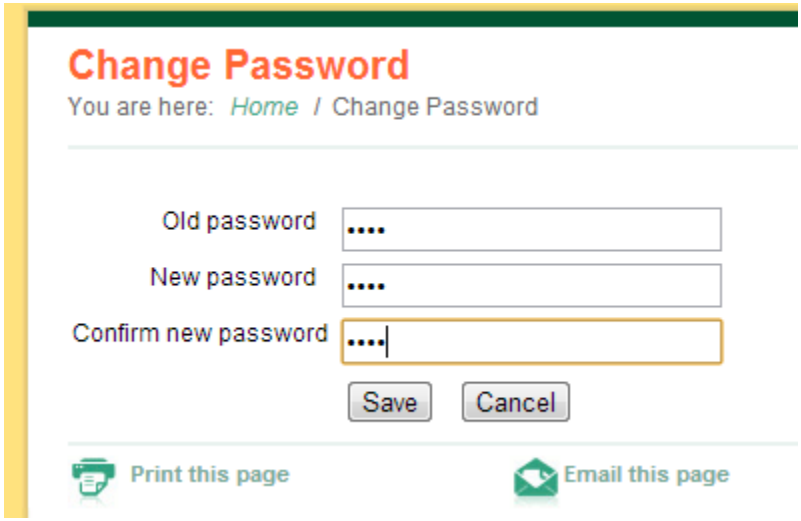
Paid publications could be distributed by members to other members or the public through a direct link to the URL:

E.g., http://www.mla.com.au/CustomControls/PaymentGateway/ViewFile.aspx?ZJnDveT2tdYID9zNHucn3rcKsWE7UpNfl1nMLQsoB79Mh3FrKKe6JnAOE+TTXy3m3EYMKKAfsht7d1Tnt3BqiA==

It's recommended that to access publications an authentication token is appended to determine access rights. This will ensure it can only be accessed when a member has authenticated.

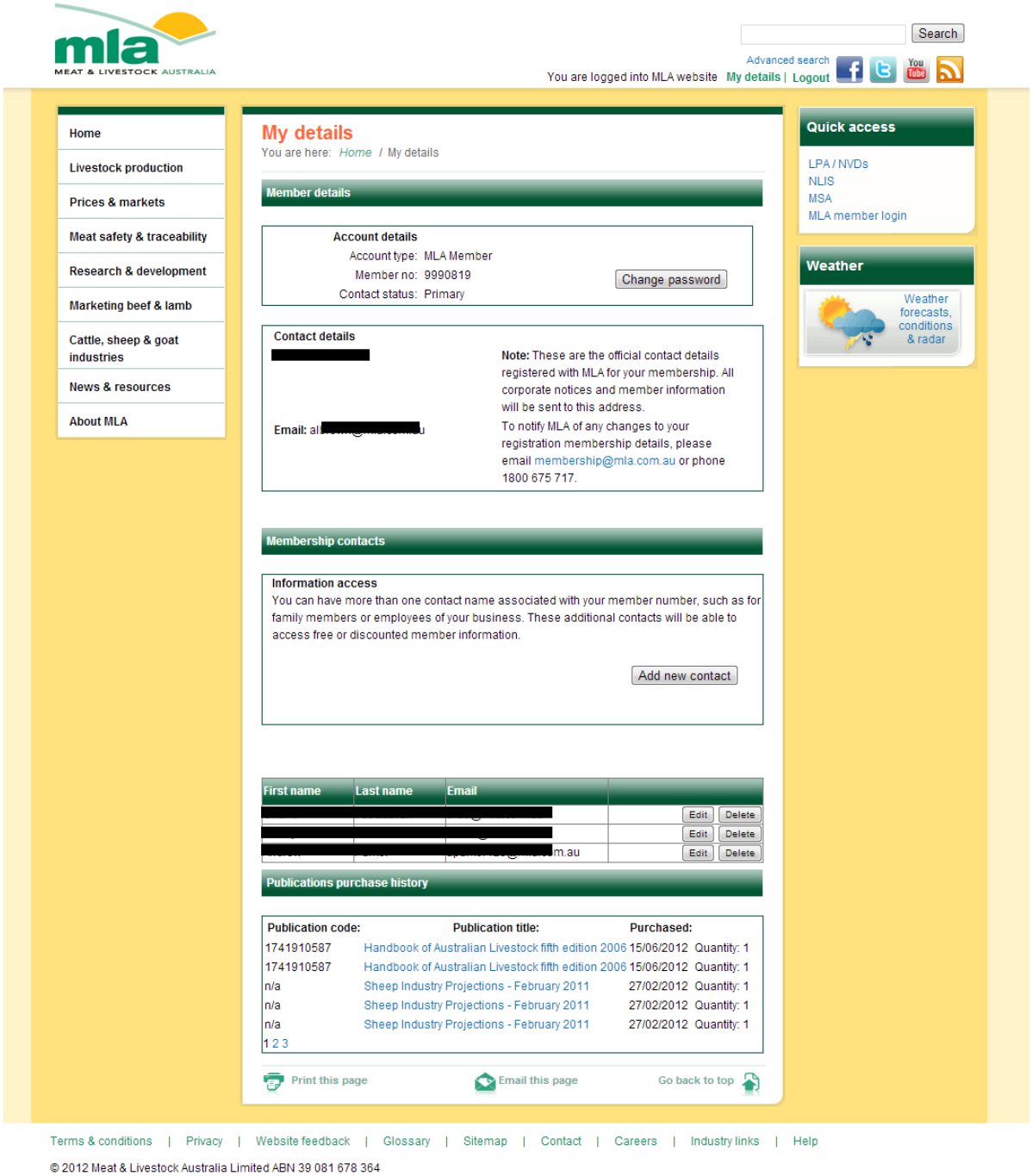
IMPORTANT SECURITY: Weak passwords are accepted

To improve security standards, passwords should be a minimum of 8 characters, with at least one upper case and one number or symbol.



IMPORTANT DATA INTEGRITY: Cannot amend details

Member details cannot be amended through the Member Profile. It's recommended that the member be able to amend their details **(**or send amendments to be applied).



4.3. Expert usability review scoring template

Usability review			
Calculator name		**Score**	**Comments**
	Hover over a guideline for more information, examples of good practice and importance to the overall user experience.	N/A = not applicable or can't be assessed	Optional - Provide a short rational for the score, such as a description of the issues found; examples of good practice and the likely impact
Starting pg			
1	The homepage / starting page includes a clear CTA and is effective in orienting and directing users to their desired information and tasks	Enter score	
2	The homepage / starting page offers clear instuctions	Enter score	
3	The homepage / starting page content is written in plain language	Enter score	
Inputs			
4	Complex forms and processes are broken up into readily understood steps and sections. Where a process is used a progress indicator is present with clear numbers or named stages.	Enter score	
5	The questions have a normal flow from anticipated to more surprising questions	Enter score	
6	A minimal amount of information is requested and where required justification is given for asking for information (e.g. date of birth, telephone number).	Enter score	
7	The label alignment matches the type of questions being asked i.e. left for personal, right for slot in and top when scanning is not necessary. And avoids two column layout	Enter score	
8	Appropriate input fields (e.g. calendar for date selection, drop down for selection) are used and required formats are indicated.	Enter score	
9	Inputs include smart defaults where possible	Enter score	
10	Required and optional form fields are clearly indicated.	Enter score	
11	The form does not contain any surprising elements or interactions	Enter score	

Errors			
12	Errors are clear, easily identifiable and appear in appropriate location (e.g. adjacent to data entry field, adjacent to form, etc.).	Enter score	
13	Error messages are concise, written in easy to understand language and describe what's occurred and what action is necessary.	Enter score	
14	Common user errors (e.g. missing fields, invalid formats, invalid selections) have been taken into consideration and where possible prevented.	Enter score	
15	Users are able to easily recover (i.e. not have to start again) from errors.	Enter score	
Results			
15	The form has a clear primary action and has a clear visual distinction between and primary and secondary actions	Enter score	
16	Output / Results are clear and distinct from inputs and use graphic where possible / necessary	Enter score	
17	Results can be interpreted easily and contain clear next steps	Enter score	
17	Links to other useful and relevant content (e.g. related pages or external websites) are available and shown in context.	Enter score	
18	Users should be able to print results easily	Enter score	
19	Users can export/share results easily	Enter score	
Help			
20	Help and instructions (e.g. examples, information required) are provided where necessary.	Enter score	
21	Help and instructions are in a position where users can find it readily i.e. beside labels if user activated, beside fields if automatic, in a separate help section where there is a lot of help required	Enter score	
22	Help is concise, easy to read and written in easy to understand language.	Enter score	
23	Users can easily get further help (e.g. telephone or email address).	Enter score	
Overall usability score (out of 100) *			

tasks.

* Poor (between 29 and 49) - Users are likely to experience some difficulties using this site or system and might not be able to complete some important tasks.
* Moderate (between 49 and 69) - Users should be able to use this site or system and complete most important tasks, however the user experience could be significantly improved.
* Good (between 69 and 89) - Users should be able to use this site or system with relative ease and should be able to complete the vast majority of important tasks.
* Excellent (more than 89) - This site or system provides an excellent user experience for users. Users should be able to complete all important tasks on the site or system.