



ILR Co-Design Conference

AGRICULTURAL BUSINESS RESEARCH INSTITUTE

GENETICS | SOFTWARE | TECHNOLOGY | HERD RECORDING | INNOVATION



Purpose

Our 3 days together were to align on the challenges of the present and opportunities of the future. We explored our principles, who we are designing for, and what is needed in our next product (codenamed ILRNext). We also explored the future of societies, the insights that would be valuable, and tackled some big topics to surface the complexity and align on our principles for designing the future of ABRI and ILRNext.



Workshop Objectives & Expectations

We took the time to understand what our collective objectives and expectations for the 3-days were.

For our customers

- Create confidence in the next ILR product
- Incorporate the voice of the customer
- Introduce a new user-friendly, easy, exciting product plan
- Understand and incorporate the functions that breed societies and breeders might want
- Show the potential of what a new platform can deliver - outside the box to what we want
- Explore how ILRNext can be improved – from a Breed Society perspective
- Understanding and advocate for the end user needs

For ILRNext

- Understand what ILRNext might look like
- Create a future-proof system
- Define a clear delivery timeline
- Get a clear consensus on the design of ILRNext
- Understand the differences between ILR2 & ILRNext
- Understand what is needed for ILRNext

Day 1

The purpose of this day was to take stock of our current state, understand who we are prioritising as our key users for ILRNext, understanding their jobs to be done, and mapping the jobs to tasks in the system and prioritise the delivery of those tasks on a roadmap. We also surfaced assumptions, dependencies, and questions that helped us align on some key design principles to guide our decision making.



Our Design Principles

Keep it simple

We work hard to solve complex problems in elegant ways to help get a user's job done. We do not allow clutter into our future product set.

Building blocks and self-service

Our platform offers modular components at its foundation, providing configurability and the ability to self-serve without us being involved.

Get it right

Ensure precision, accuracy, security, and data privacy are embedded in our processes and systems to build a solid foundation for future growth.

Intuitive & efficient

Prioritise user friendliness and streamlined workflows to enhance usability and productivity.

Value for all

We value standardisation for the benefit of everyone, so we can constantly roll out new features, create a responsive support, better insights, and better value for money over time.

Members come first

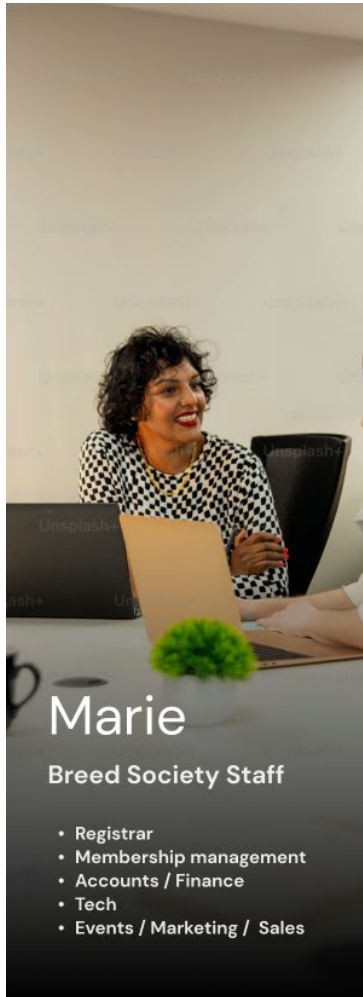
We will prioritise the experience of members (farmers) as they are our end user. This means we will prioritise providing proactive insight, usability and accessibility through a multi-device web-first product, and online/offline capabilities where it makes sense.

Day 1

Personas

We then spent time exploring personas, and together, we pinpointed the crucial ones to shape our product around. Your invaluable insights delved deep into these personas, shedding light on their unique characteristics. With your help, we also managed to identify and prioritize the essential jobs they need to get done. It's all part of our mission to create an even better product.





i Marie is an experienced Breed Society staff member. Marie's role encompasses a wide range of responsibilities.

! **Challenges**

- Industry competition
- Implementing changes in breeding practices or genetic selection methods
- Market conditions, environment challenges
- Providing education and training to members
- Need to make do with the technology and tools they have.
- Dealing with grumpy members
- Some members are resistant to adopting new genetic technologies
- Staying in compliance with regulations can be time consuming
- Managing the breeds finances, fees and budget
- Needs to ensure the business keeps running
- Keeping up-to-date with the latest advancements
- Maintaining accuracy and integrity of the breed and pedigree
- They can't find anything in system easily
- Communication with multiple people: Members geneticists, breeds and industry partners
- Members vary in their level of expertise, size of operations and breeding goals.
- Double handling of information

📊 **Tasks & behaviours**

- Handling membership applications renewals and inquiries
- Managing extensive genetic databases
- Reviewing genetic evaluations and EBs for various traits to guide breeding decisions
- Making sure that the member pays for everything and if it cant be paid, sorting out when and how it can be paid
- Promotes the breed to increase awareness
- Ensures members comply with regulations
- Organises educational programs, workshops and seminars
- Processing DNA/ reporting results
- Input results manually.
- Maintaining an up-to-date membership database
- ensures the accuracy and integrity of pedigree and genetic information
- Providing support to members, answers their questions and assists with genetic selection decisions
- promotes the breed through marketing, events and education initiatives
- Collaborates with geneticists and researchers to improve breed and genetics
- Ensures members comply with regulations, constitutions and bylaws
- Prepares reports and publications based on genetic and performance data

👤 **Characteristics**

- Knowledgable
- Detail orientated
- Problem solver
- Team player
- Great communicator
- Organised

🚩 **Goals**

Marie has a strong belief in the value of preserving and improving the breed's Herd Book. She takes pride in her role as a breed society admin, knowing that her work contributes to the continued success and growth of the breed. Her dedication to supporting breeders drives her to excel and make a positive impact in the cattle industry.



Sandra
Dairy Farmer (Member)

i Sandra is a dedicated dairy farmer with a strong family history in cattle farming. She has worked on farms most of her life and developed the love for it from her grandparents.

! Challenges

- The dairy market is unpredictable
- Sustainable practices can be labor intensive, and require significant investment.
- Ensuring the health of the herd and mitigating the risk of diseases
- Software and tools
- Manage the farms finances and budgets
- Farming is physically demanding and often requires long hours
- Extremely time poor, making time for family
- Succession planning
- Red tape & compliance
- Labour availability and management

📊 Tasks & behaviours

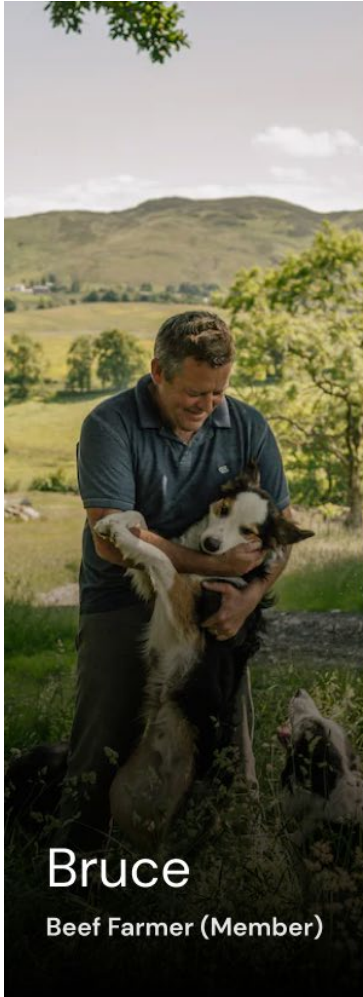
- Overseeing the health and well being of dairy cattle
- Rotating cattle through paddocks.
- Paddock management
- Monitoring calves, feeding 2 times a day.
- Keeping detailed records of cattle health, performance and breeding data.
- Negotiate cattle sales
- Involves family in farm activities and teaches kids about farming.
- Conserving seed, hay silage.
- AI / ET programs
- Feeding and watering, regular health checks
- Scheduled milking 2 times a day.
- Assisting with calving and ensuring the health of the calves.
- Implementing sustainable practices
- Budgeting and managing farm expenses, pay accounts
- Requests genomic tests and captures results, interpret results and use to inform decisions
- Work with nutritionists to formulate balanced diets and ensuring they receive proper nutrition for growth and performance and to produce quality milk
- Maintaining the farm dairy shed and milking equipment to meet standards
- Make genetic breeding decisions
- Participates in local agricultural farming discussion with groups, organisations, webinars.
- Ensure milk meets food standards 365 days
- Using software for decision support
- Herd record production info
- Work with consultants, vets, nutritionists, breeders

👤 Characteristics

- Passionate
- Resilient
- Patient
- Community-orientated
- Family-centric

🚩 Goals

Sandra is deeply committed to her role as a dairy farmer and is dedicated to producing high-quality milk for her community and beyond. Utilise information and data to inform business decisions. Ensure milk production meets quality standards. Make time for family and stay ahead of the curve with management practices. Her love for the land and livestock drives her to overcome obstacles and she wants her family to continue the farming tradition.



i Bruce is a dedicated beef farmer with a strong family history in cattle farming. He has worked on farms most of his life and developed the love for it from his grandparents.

⚠ Challenges

- The beef market is unpredictable
- Sustainable practices can be labor intensive, and require significant investment
- Ensuring the health of the herd and mitigating and mitigating the risk of diseases
- Software and tools
- Adverse weather conditions, such as droughts
- Managing the farms finances & budgets
- Farming is physically demanding and often requires long hours
- Time, family and community life balance

📈 Tasks & behaviours

- Overseeing the health, feeding and well being of cattle and calves
- Rotating cattle through paddocks
- Keeping detailed records of cattle health, performance and breeding data
- Involves his family in the farm activities and the teaches his kids.
- Formulating balanced diets and ensuring they receive proper nutrition for growth and performance.
- Implementing sustainable practices and adhering to compliance/regulations.
- Budgeting and managing farm expenses
- Identifying optimal times to sell cattle & negotiating cattle sales
- Participates in local agricultural organisations
- Advertising, promotion and branding

👤 Characteristics

- Passionate
- Resilient
- Procrastinator
- Busy / Time poor
- Community Orientated
- Family centric

🚩 Goals

Bruce is deeply committed to his roles as a beef farmer and is dedicated to producing high-quality beef for his community and beyond. His love for the land and livestock drives him to overcome obstacles, and using data to inform his decisions. Bruce wants his family to continue the farming tradition.



Becky
Commercial Farmer

i Becky is a bull buyer who uses genetic information to inform purchase decisions. She is focussed on improving productivity, profit and 'To-Carcass' outcomes.



Challenges

- Connectivity
- Rising costs
- Rate of genetic gain
- Using right genetics for their objectives
- Extreme weather
- Cattle market can be unpredictable
- Software and tools
- Access health and genetics of cattle accurately.
- Economic downturns



Tasks & behaviours

- Utilises online platform
- Brings together beef farmers looking to sell cattle with interested buyers
- Stays up to date with industry trends
- Stays up to date with market conditions
- Utilises online platform
- Develops and execute marketing strategies
- Builds a network of contacts in the industry
- Buys locally vs interstate



Characteristics

- Resourceful
- Charismatic
- Community minded



Goals

Reducing cost of production, while increasing returns. Improving market options and maintaining sustainable agriculture practices.



Dr Sarah
DNA testing specialist

i Dr. Sarah is a highly skilled scientist specialising in DNA testing. She holds a Ph.D in molecular genetics. Dr. Sarah's fascination with genetics and DNA analysis led her to persevere a career focused on conducting DNA tests for a wide range of applications.

! **Challenges**

- Ensuring the quality of the collected DNA samples are accurate for testing
- Staying up to date with the latest technologies
- Complying with laws and regulations related to DNA
- Handling sensitive genetic information
- Turn around times (Time-sensitive)
- Accurate reporting

📊 **Tasks & behaviours**

- Handling and preparing biological samples
- Amplifying specific DNA sequencing
- Ensuring the accuracy and reliability of tests
- Contributing to scientific research
- Isolating DNA from collected samples using various methods
- Keeping up with advancements
- Conducting various DNA tests, including parentage, disease and ancestry + development of new tests and methods of testing
- Analysing genetic data to identify patterns or mutations
- Generating reports
- Interpreting DNA and DNA results

👤 **Characteristics**

- Detail orientated
- Problem solver
- Analytical thinking
- Problem solver
- Ethical
- Tech-Savvy

🚩 **Goals**

Driven by her passion for genetics and the potential of DNA testing, Dr. Sarah is dedicated to accuracy ethics and technical innovation.

Develop reports through an API that will load data to ILRnext database.

Day 2

The purpose of this day was to share our concepts and vision for the future product. We discussed gaps, future features, likes and dislikes. We then built on these concepts and explored the genetic evaluation journey, and co-designed some new concepts. We weighed in on branding and impressions preferences, and then some of us joined the infamous party bus!

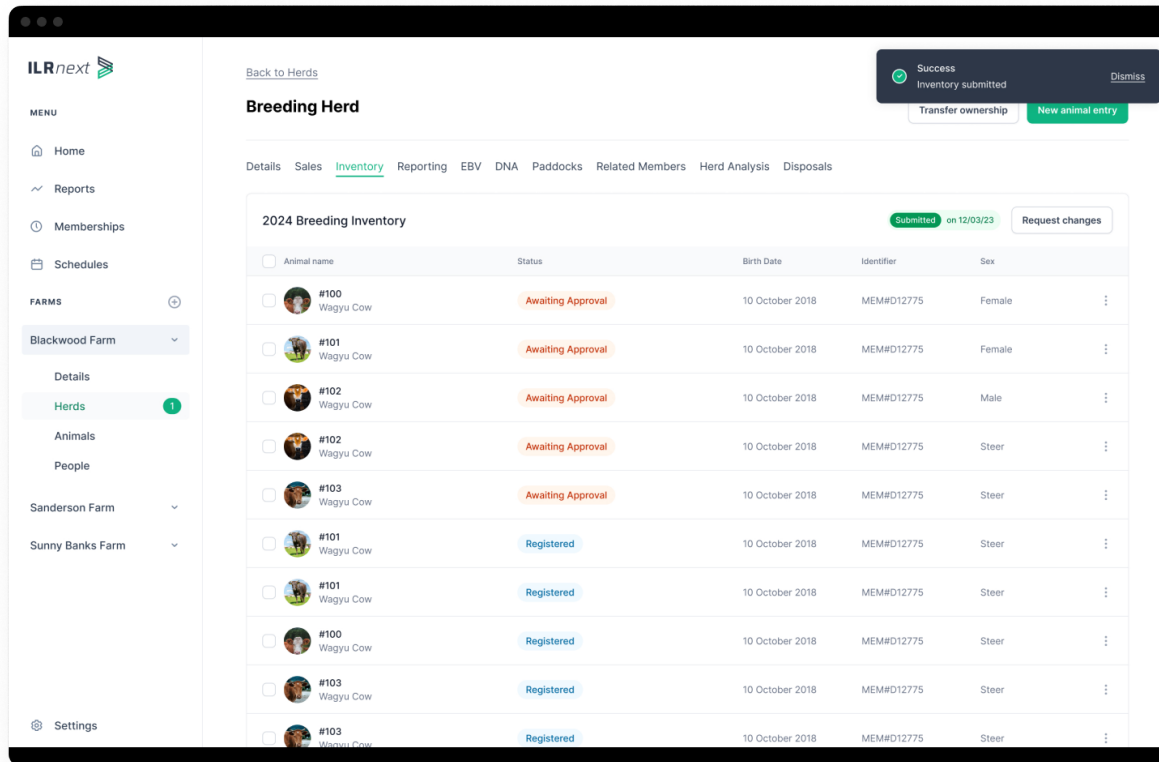


ILRNext Concept Validation

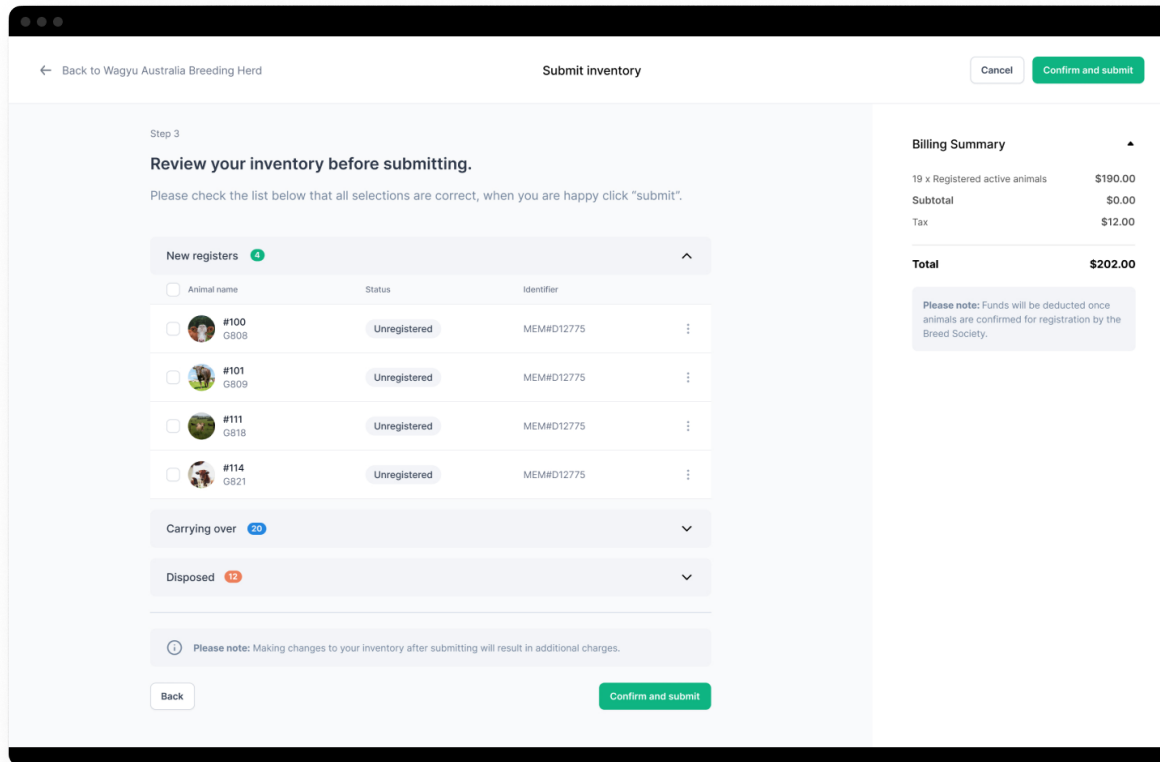
Following our research, we got our creative hats on and started brainstorming the possibilities for our future system. We were bursting with ideas and couldn't wait to share them with you. Your feedback is always incredibly valuable to us. Our concepts focused on prioritising members, standardising the product for societies but providing them the ability to configure and control the system to suit their business.

We also explored extensions of the product to support members needs, such as a mobile app to manage their herds and animals, making data entry more accurate and timely. We also explored tools that enable farmers to easily interrogate their data using modern AI technology, and get proactive insights to drive their decision making. The following pages showcase some screen shots from the concepts we explored.

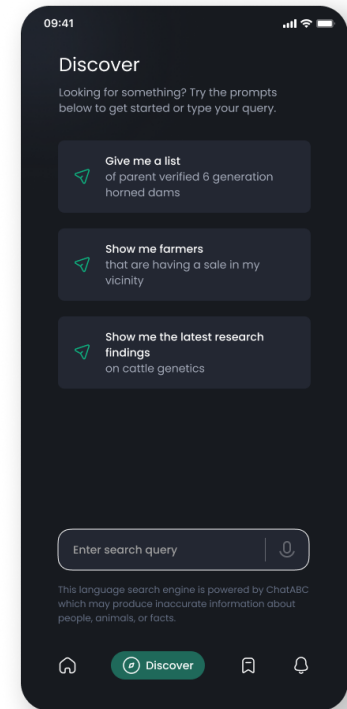
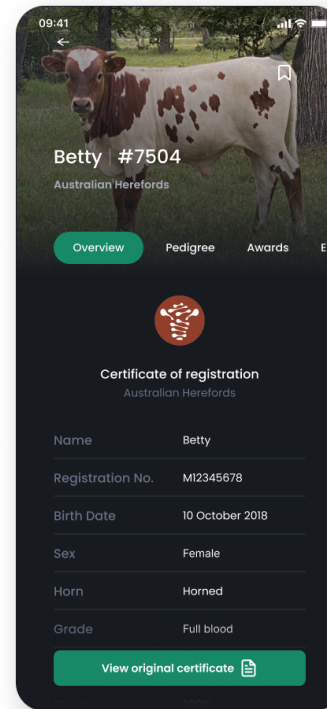
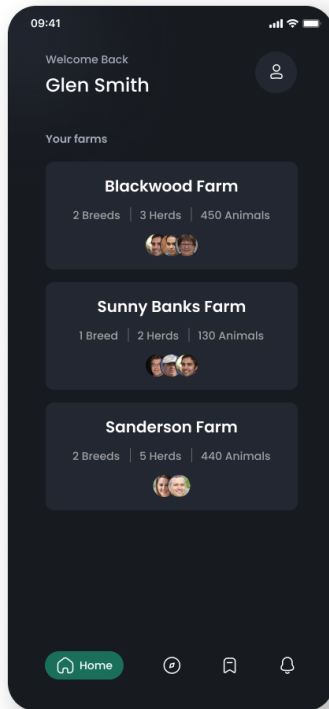
Desktop App Concept



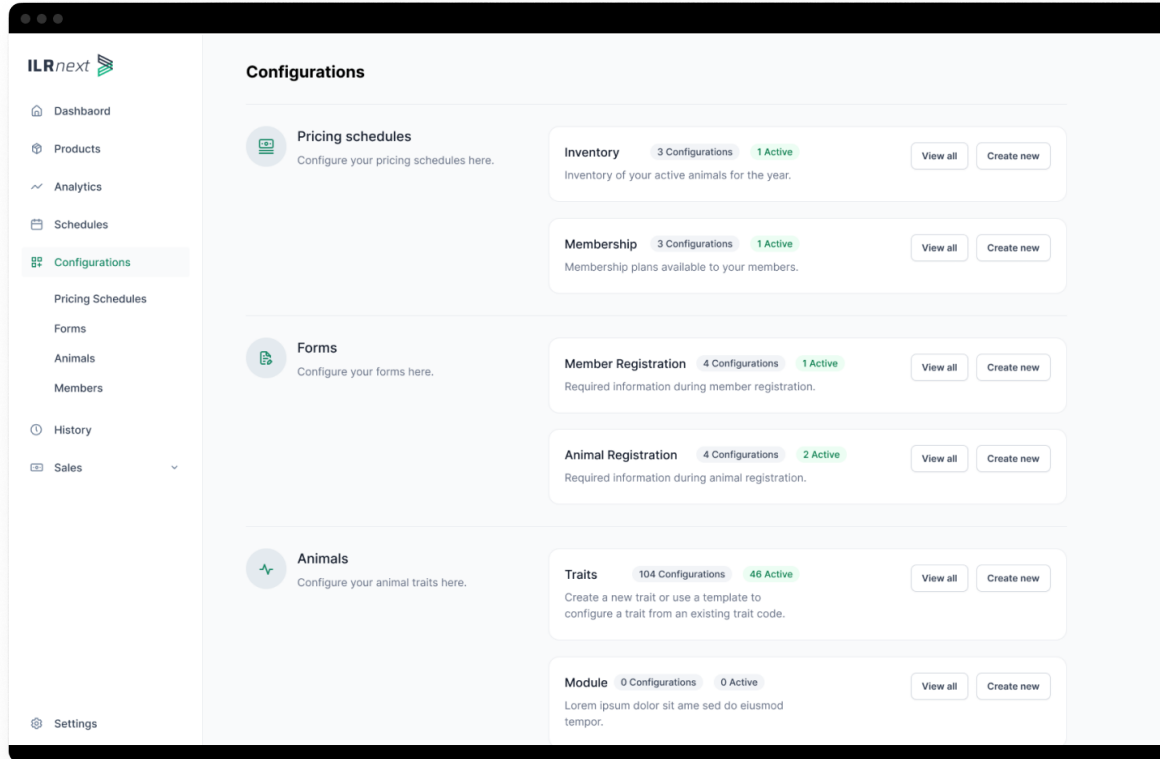
Desktop App Concept



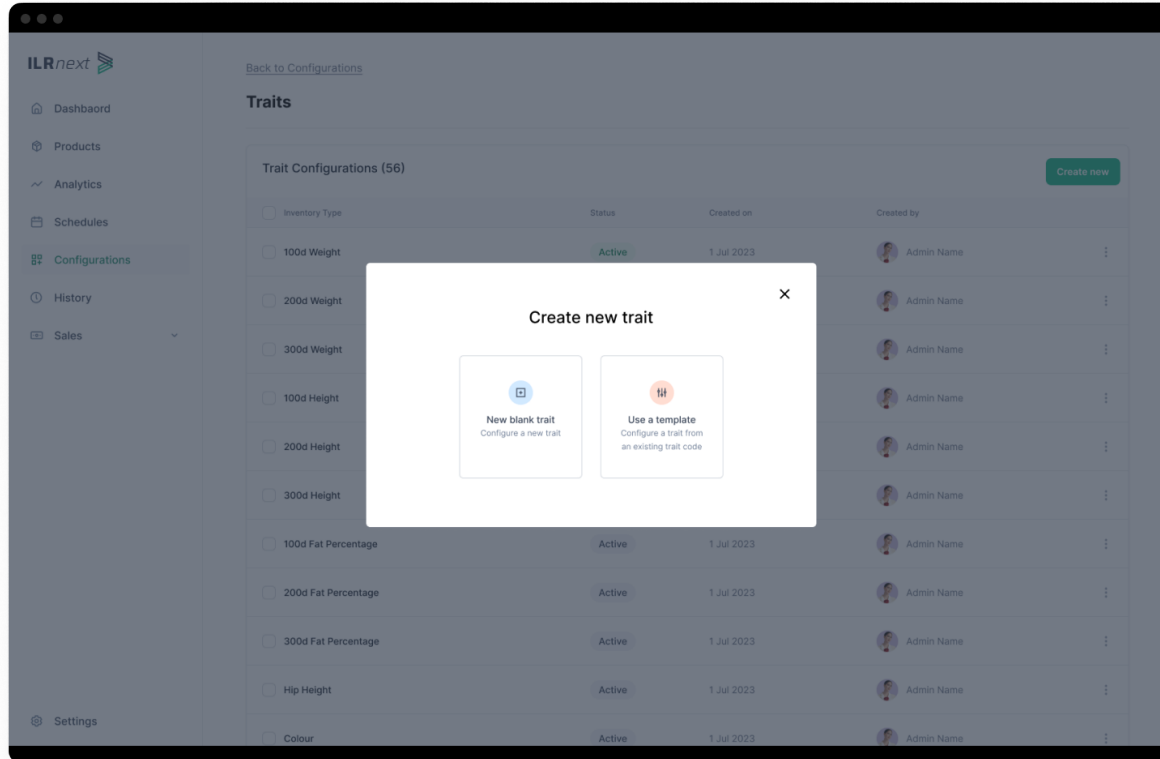
Mobile App Concept



Configuration Concept



Configuration Concept



Configuration Concept

The screenshot displays a web interface for configuring an animal trait. At the top, there is a navigation bar with a 'Back to Configurations' button, the text 'Animal trait', and a 'Create new trait' title. On the right side of the navigation bar are 'Cancel' and 'Save' buttons. Below the navigation bar is a progress indicator with four steps: 'Step 1 Trait details', 'Step 2 Recording', 'Step 3 Rules', and 'Step 4 Review'. The 'Review' step is currently active, indicated by a green underline. The main content area is titled 'Review' and includes a sub-header 'Review your new configuration and confirm the details are correct'. The configuration is organized into three sections: 'Details', 'Metrics', and 'Recording'. Each section contains a table with two columns for configuration parameters and their values.

Details	
Title	Name of trait
Short description	Short description goes here
Long description	Long description goes here, spanning over two or more lines like this.

Metrics	
Unit of measurement	kg
Sex	All

Recording	
Authority	Registered Veterinarian

Day 3

The purpose of this day was to explore genomics data, think about how we want to visualise data in the new system, and what insights might be useful for our target personas. We made two pivots to include a summary of ABRI's current plans for the product, create clarity on timelines and costs, and understand the future themes for societies and what their tech landscape will likely look like.



Genomics Data

We were absolutely thrilled to have Brad Cook as a guest speaker who shared his wisdom on genetic data structures with us. Data extraction and the utilization of genomic predictions were central themes, with a focus on functional variance involving both phenotypic and genomic data. Brad's presentation prompted a range of important questions and considerations. These included inquiries about the contents of our database, the existence of documentation outlining what can be recorded, the composition of our reference population, the requisite number of traits for analysis, and the establishment of robust metrics for evaluating data quality. Of particular interest was the exploration of crossbreeding metrics and how they are evolving. The workshop also led to discussions on how to effectively query the data, with an emphasis on clients' use of genomic predictions to enhance their service offerings.



Data Visualisation

We embarked on a cool exploration into the world of data visualisation. We rolled up our sleeves and had a good look at all the creative ways we can bring data to life. It was all about finding the sweet spot between what looks stunning and what works like a charm.



ABRI Product Approach, Governance & Timelines

Our approach for ILRNext is anchored in bringing societies and members to the forefront. This started with the discovery research with our clients, and now that we have started prototyping the future product, we will be iteratively testing our concepts and designs as we progress through the work.

We shared the details of how we will achieve an iterative development/test process involving clients. We understand the challenges ahead of us in terms of business rules and data migration, and we spoke openly about our thoughts on how we will approach this.

We are developing an Early Adopter Program for clients who wish to be part of the testing and validation as we design the product, and before we develop it. Some of you have expressed an interest in this. If you have specific people you would like to nominate, please let us know.





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