DataGene
Annual Operating Plan

2019/20

Contents

Executive Summary

This document is the third Annual Operating Plan (AOP) prepared by DataGene and covers the period July 2019 to June 2020. The operating plan is based on the DataGene five-year Business Plan for 2019/20 to 2023/24 and incorporates direction from the Herd Improvement Strategy 2019-2024. It is predicated on the current operating environment and describes the 12-month deliverables for the company.

The AOP provides a clear line of sight on operations for the Board and ensures a focus on key deliverables over the year for management.
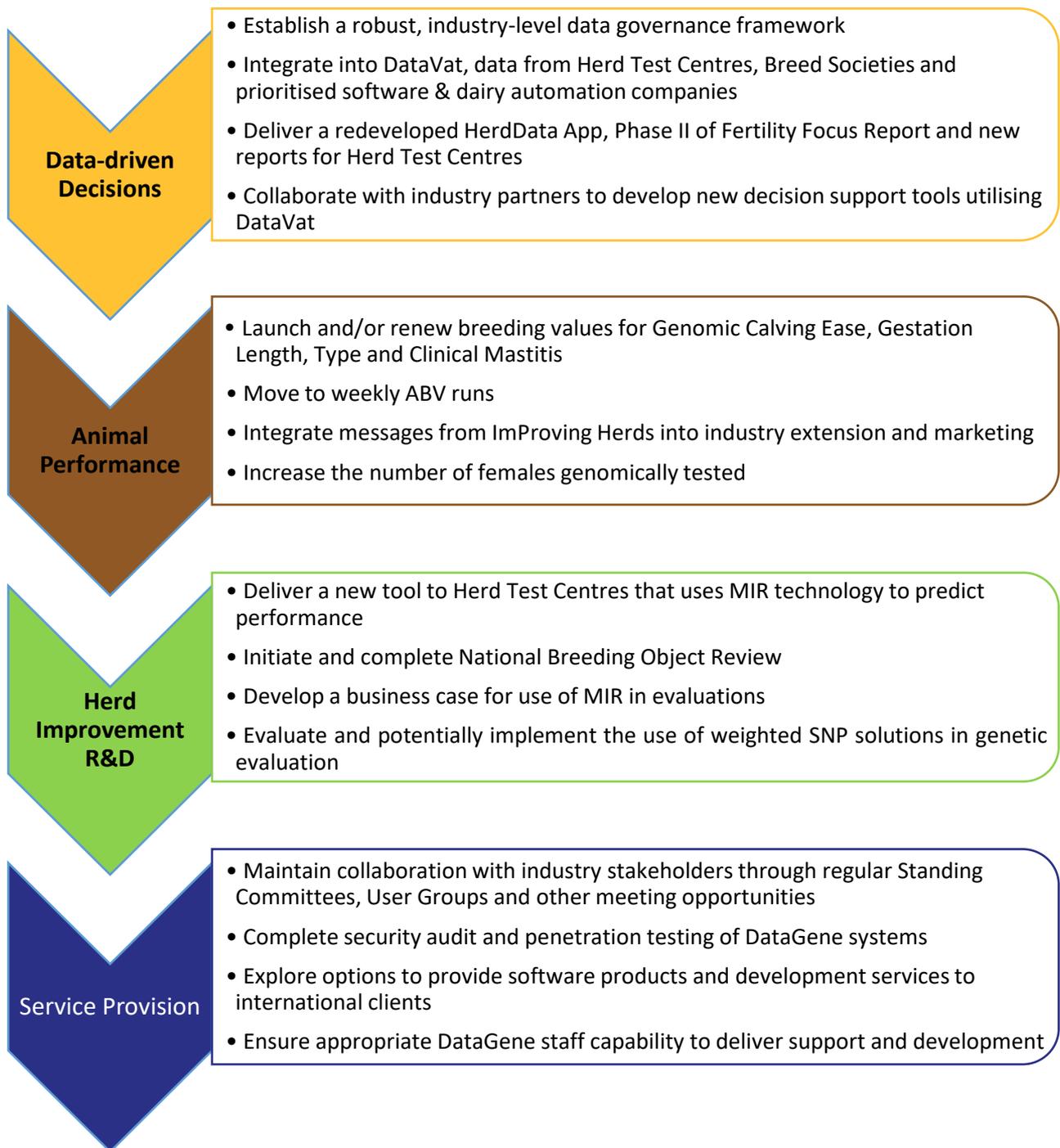
Strategic Priorities

DataGene is transitioning from a start-up phase with a focus on delivering large infrastructure projects to a more mature business delivering industry services while expanding the data governance, data sources and functionality of DataVat. This transition takes place against a backdrop of industry consultation around the revised Herd Improvement Strategy 2019-2024. DataGene's strategic priorities for 2019 to 2024 are laid out below and reflect the industry priorities identified through the Strategy and elaborated in the DataGene five-year Business Plan 2019-2024.

Strategic Priorities			
Improved decision-making from data	**Increased animal performance through herd improvement**	**Improved animal performance from research and development**	**Improved and diversified services**
• Develop and support new decision tools • Expand and secure data • Drive and support industry innovation	• Increase reliabilities • Improve service delivery • Increase farmer and industry service uptake • Increase the number of genomically tested females	• Deliver new health breeding values • Use genomics and other technology (MIR) to predict future performance	• Build and maintain DataGene and industry infrastructure • Develop and maintain industry solutions • Establish new revenue streams

Key Deliverables for 2019/20

DataGene's key deliverables across each of the strategic priorities are:

Data-driven Decisions

- Establish a robust, industry-level data governance framework
- Integrate into DataVat, data from Herd Test Centres, Breed Societies and prioritised software & dairy automation companies
- Deliver a redeveloped HerdData App, Phase II of Fertility Focus Report and new reports for Herd Test Centres
- Collaborate with industry partners to develop new decision support tools utilising DataVat

Animal Performance

- Launch and/or renew breeding values for Genomic Calving Ease, Gestation Length, Type and Clinical Mastitis
- Move to weekly ABV runs
- Integrate messages from ImProving Herds into industry extension and marketing
- Increase the number of females genomically tested

Herd Improvement R&D

- Deliver a new tool to Herd Test Centres that uses MIR technology to predict performance
- Initiate and complete National Breeding Object Review
- Develop a business case for use of MIR in evaluations
- Evaluate and potentially implement the use of weighted SNP solutions in genetic evaluation

Service Provision

- Maintain collaboration with industry stakeholders through regular Standing Committees, User Groups and other meeting opportunities
- Complete security audit and penetration testing of DataGene systems
- Explore options to provide software products and development services to international clients
- Ensure appropriate DataGene staff capability to deliver support and development

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Financial Projections

Delivery of new business projects and transition funding from Dairy Australia, in conjunction with tight fiscal control, equates to a budgeted operating surplus (excluding non-cash items) in 2019/20. The inclusion of depreciation and amortisation, which substantially increases in 2019/20 with GES NP coming on-line, equates to a deficit at the budgeted year end. Income is projected to fall due to a number of one-off income lines included in 2018/19, such as reimbursements for office fit out and additional income from the Health Data for Healthy Cows and ImProving Herds projects.

DATAGENE BUDGET INCOME STATEMENT	Forecast 2018/19	Budget 2019/20
Total Income	4,825,000	4,634,000
Total Expenditure	5,046,000	4,513,000
Operating Surplus/(Deficit) excl non-cash	**-221,000**	**121,000**
Depreciation & amortisation	289,000	552,000
Surplus/(Deficit) incl non-cash	**-510,000**	**-431,000**

DATAGENE BUDGET BALANCE SHEET	Forecast 2018/19	Budget 2019/20
Assets	8,736,000	8,120,000
Liabilities	4,130,000	3,851,000
Net assets	**4,606,000**	**4,269,000**

DATAGENE BUDGET CASHFLOW	Forecast 2018/19	Budget 2019/20
Cash at beginning of the financial year	1,483,000	305,000
Net cash provided by operating activities	-870,000	101,000
Cash used in investing activities	-308,000	-25,000
Cash at end of the financial year	**305,000**	**381,000**

Risk Mitigation

A formal risk management framework was implemented in 2017 to monitor and address risks, as well as establish an ongoing plan for management of these risks. The risk register and management plan is reviewed regularly by the Board and management. Four risks are identified as high priority for mitigation in this AOP.

The first risk relates to the current reliance on limited sources of funding. This is proposed to be mitigated by work in two streams: new project work in the software and services areas, and the building of new services on the infrastructure of DataVat.

The second key risk is around personnel dependency. This risk is being mitigated by targeted cross-training to ensure coverage of roles and ongoing work to support and develop employees.

The third key risk relates to any significant and sustained technical failure, e.g. server outage, cybersecurity, etc. This risk is being mitigated by significant oversight and outside expertise to test penetration risk and audit security.

The final risk relates to data providers not implementing changes to their systems to provide data to DataVat, and service providers (and farmers) not taking up DataGene services. These risks are being mitigated by ongoing communication with stakeholders about the benefits of DataVat.

1 Purpose

This document is the third Annual Operating Plan (AOP) prepared by DataGene and covers the period July 2019 to June 2020. The operating plan is based on the DataGene five-year Business Plan for 2019/20 to 2023/24 and incorporates direction from the Herd Improvement Strategy 2019-2024. It is predicated on the current operating environment and describes the 12-month deliverables for the company.

In general, the content of the AOP is at a summary level. A greater level of detail is contained in individual tracking tools for each business unit.

The AOP provides a clear line of sight on operations for the Board and will be a guiding document for management to focus on key deliverables during the year.

2 Strategic Context

In April 2019, DataGene released into production the large, multi-year projects of the Genetic Evaluation Software New Platform (GES NP) and the Centralised Data Repository (CDR), now called DataVat. In 2019/20, the company will transition from a 'start up' phase to more of a 'growth' phase, without the disruptions of large internal development projects.

This growth phase will focus on leveraging the dairy industry's investment in both DataGene's infrastructure and capability. DataGene will transition from a project development focus to a product improvement and customer delivery focus. A successful transition will enable the internal capacity built over the project lifecycle to continue to deliver substantial improvements for customers. For example, working with data contributors to populate the DataVat system as rapidly as possible. This capacity also creates new opportunities to leverage the knowledge, skills and infrastructure for other projects and industries. For example, working with the Forage Value Index and potentially other livestock industries or international peers. This would enable the significant investment in Australia to be leveraged and increase DataGene's ability to provide cutting-edge services to its stakeholders.

DataGene is owned by the dairy industry, with foundation members being Dairy Australia, Australian Dairy Farmers (ADF) and the National Herd Improvement Association (NHIA). As at October 2018, total membership of DataGene was 25 members including herd test centres, genetics suppliers, genetic service providers and breed associations.

2.1 DataGene's Vision, Mission, Values & Strategic Priorities

Vision

Enabling farmers and industry to maximise profit through data-driven decisions

Mission

DataGene delivers world-class genetic evaluation, software and decision-making tools to enable Australian farmers to improve their herd and maximise their profit through data-driven decisions and innovative industry services

Values

DataGene has a number of values that define what's important to the organisation and guide its activities, behaviours and performance:

1. We work towards shared and innovative outcomes for members and stakeholders (commitment to clients);
2. We depend on genuine and sustained stakeholder engagement (direct, open & honest communication);
3. We are genuinely inclusive and value farmer and member involvement in governance and oversight functions (inclusive);
4. We aim to be creative and innovative in our products and services (innovation);

5. We treat our people with respect, support them in their development and value their contribution to our success (engagement with employees); and

6. We apply best-practice corporate governance and financial management principles (integrity & ethical values).

Strategic Priorities

DataGene is transitioning from a start-up phase with a focus on delivering large infrastructure projects to a more mature business delivering industry services while expanding the data governance, data sources and functionality of DataVat. This transition takes place against a backdrop of industry consultation around the revised Herd Improvement Strategy 2019-2024. DataGene's strategic priorities for 2019 to 2024 are laid out below and reflect the industry priorities identified through the Strategy and elaborated in the DataGene five-year Business Plan 2019-2024.

Strategic Priorities			
Improved decision-making from data	**Increased animal performance through herd improvement**	**Improved animal performance from research and development**	**Improved and diversified services**
• Develop and support new decision tools • Expand and secure data • Drive and support industry innovation	• Increase reliabilities • Improve service delivery • Increase farmer and industry service uptake • Increase the number of genomically tested females	• Deliver new health breeding values • Use genomics and other technology (MIR) to predict future performance	• Build and maintain DataGene and industry infrastructure • Develop and maintain industry solutions • Establish new revenue streams

Strategic Priority 1 aims to support the majority of dairy farmers and service providers to make data-informed decisions to drive animal performance, improve profitability and meet value chain requirements (including transparency, integrity and safety of dairy production). It is dependent on ensuring that industry data collection, management and analytics is seamless, streamlined and cooperative for dairy farmers and service providers. It also has a focus on increasing the measurement of individual cow performance through an increased number of cows participating in herd testing and increasing data accessed from farms with in-line meters and other sensors or data sources.

Strategic Priority 2 aims to increase the number of farmers breeding replacements from Good Bulls and using Australian profitability metrics to drive herd improvement. It relies on world-class evaluation services delivered by DataGene that are market-focused, including transparent quality assurance processes, service level agreements, and regular benchmarking of services against local needs and global trends. The priority in this area is to close the gap between potential and actual genetic gain, by increasing the number of farmers using Australian profitability metrics to drive elite sire selection.

Strategic Priority 3 DataGene also has responsibility within the Herd Improvement Strategy 2019-2024 in the area of improved animal performance from research and development. The majority of this accountability sits with DairyBio, however DataGene has a focus on increasing genomic technology use and working to bring MIR-based technology to market.

Strategic Priority 4 has four elements: to ensure development, implementation and maintenance functions are effectively resourced and responsive to rapidly changing environment; facilitate the uptake of appropriate technologies, and adapt them for Australian conditions where appropriate; to establish new revenue streams to support core business functions; and, fulfil opportunities for innovation, co-operation and rationalisation within the sector, particularly with regards to pre-competitive services,

marketing, laboratories, transport and logistics. DataGene has a clear leadership and support role in delivering on this priority.

2.2 Our People

DataGene's organisational structure has evolved since formation and will continue to be refined as the company changes and grows. The management structure established by the CEO is fit for purpose to deliver DataGene's vision to the industry. Staff have been placed into functional areas based on the types of work completed. All staff are employees of DataGene, with the exception of the science staff in Genetic Evaluation who are employees of Agriculture Victoria.

Central to the structure is the leadership team who work closely together and with the rest of the company to establish the DataGene culture, standards and processes to allow the achievement of its vision. The Leadership Team is made up of the heads of the business units and other key staff (including DairyBio) and meets regularly. The AOP forms the basis for the goals of each business unit and relevant aspects are incorporated into the performance and development plans of each DataGene employee.

The Lead Science function is provided by DairyBio rather than by a DataGene employee. However, the integration of the science into the implementation framework was a key driver for the creation of DataGene. Therefore, it is important to recognise this in a management structure and institutionalise the shared planning and implementation across the organisations.

2.3 Stakeholder Relationships

DataGene collaborates with a range of organisations to enable pre-competitive actions such as data sharing, the development and conduct of research and development, extension activities, strategy development and promotion of the dairy industry and herd improvement sector. DataGene has five key strategic relationships:

1. Dairy Australia is the primary funder and a founding member of DataGene. Dairy Australia also operates as a client of DataGene in the development of software solutions such as the updates to the Fertility and Mastitis Focus Reports.

2. Australian Dairy Farmers has a key role to ensure that DataGene's priorities and activities reflect the priorities of the dairy farmer community, in addition to DataGene's many direct interactions with farmers. DataGene relies on ADF to be publicly supportive of and a strong advocate for herd improvement. DataGene also has a direct relationship with farmers through its products, services, extension and communications.

3. National Herd Improvement Association, as an organisation, is a founding member of DataGene. Whilst DataGene also has direct relationships with NHIA members, who are also members of DataGene.

4. In addition, there are important relationships with non-NHIA members such as Zoetis, Neogen and Apiam. These are key relationships for the delivery of DataGene products and services and the development pipeline for new products and services, particularly as they are major clients and contributors of data, respectively. Zoetis and Neogen deliver genomic services and Apiam provide software to the vet industry and are key collaborators for data and data services with DataVat.

5. Agriculture Victoria is a client for DataGene for certain projects; it is an in-kind contributor to DataGene in terms of supporting overhead costs for some in the Genetic Evaluation team; it is a user of DataGene data; and it is a strategic partner in its provision of research outputs to industry through DairyBio.
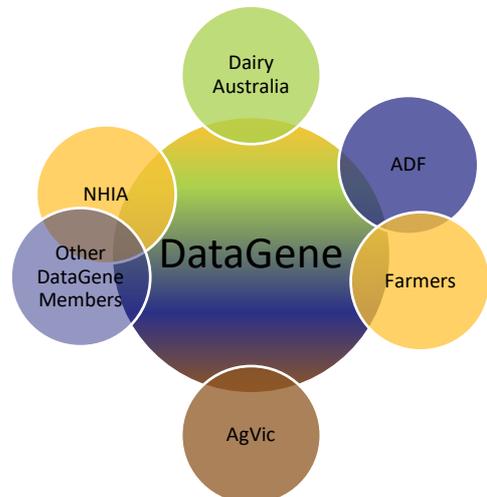
    DataGene has a range of end-users, customers and stakeholders with which it interacts at various levels. These are described below:

Farmers

Funding comes partially from dairy farmer levies paid to Dairy Australia.

Farmers use breeding values and tools such as the Good Bulls App, Genetic Progress Report and the Herd Test Dashboard

Farmers buy DataGene products such as HerdData and Genomic Breeding Values

Farmers are a key audience for DataGene comms and marketing

Farmers supply data to drive genetic evaluation

Service Providers

Service Providers use breeding values and tools such as the Good Bulls App, Genetic Progress Report and the Herd Test Dashboard

Service Providers work collaboratively with DataGene on projects

Service Providers are a key audience for DataGene comms and marketing

Service Providers purchase DataGene services such as breeding values and software

Service Providers are part of the industry's data pipeline

Service Providers provide data to DataVat

Industry bodies

Dairy Australia is a key funder and strategic partner, as well as a customers

ADF is a strategic partner to ensure alignment of strategy and priorities with the farmer community

NHIA is a strategic partner as a conduit to its constituent members

Agriculture Victoria is a strategic partner in both research and delivery

Gardiner Foudnation

Researchers

DataGene provides data to various researchers, such as

Agriculture Victoria

Universities

Dairy Australia

2.4 Operating Environment

The current operating environment for DataGene remains in a state of flux for several reasons. Firstly, the dairy industry has been hit hard by margin pressure over several years, which impacts farmers' financial ability to take up technology such as genomic testing of females and herd testing. While price is predicted to improve, farm costs are rising and general sentiment in the industry is still low. The reduction in milk production and slow recovery also impacts DataGene's largest funder by reducing the levy income of Dairy Australia.

Secondly, the global herd improvement industry is changing rapidly due to genomic advances and the rise of new sources of data. This is affecting all of DataGene's industry stakeholders: breed societies, bull companies, herd test centres and data providers. Each will have to adapt to the new world in different ways. DataGene is not immune to this as all of its peers in international genetic evaluation units face challenges from the rise of private (proprietary) indices and breeding values. The independent evaluation units are in ongoing discussions about how to face common threats and opportunities.

DataGene now has a track record of working with stakeholders which is a more open and transparent manner than previously. The necessary transition to a collaborative industry culture is well underway but will need continued work. This is especially true in terms of the transition into DataVat where companies have to see the larger industry good as well as the commercial interest in sharing data.

Substantial progress has been made on restoring stakeholder confidence in the Australian genetic evaluation system. The public launch of GES NP was critical to embed this progress and has gone reasonably well. Post-launch, there is still a backlog of work, such as genomic type and haplotypes, that will need to be done to address a range of concerns raised over the past few years by stakeholders.

The environment for DataGene in the coming financial year is transitional after the completion of the large infrastructure projects. DataGene will need to look for and secure additional project work and income to build the future of the company.

2.5 SWOT

Strengths and weaknesses of DataGene and opportunities and threats in the wider operating environment were identified as context for the DataGene Business Plan. The results presented below, coupled with input from stakeholders, were also used to prioritise the work plan presented in this AOP.

STRENGTHS	WEAKNESSES
• DataVat capable of housing data from a variety of sources and enabling new services and products • Strong membership base and close collaboration with herd improvement industry partners • In-house capability, industry knowledge and experience • Resilient staff committed to DataGene's mission • Service providers increasingly supporting DataGene and promoting Australian breeding values and indices • Standing Committees provide strong links between industry and DataGene • Strong science pipeline of improvements • Redeveloped Genetic Evaluation System New Platform (GES NP) provides a step-change for genetic evaluations • Leader in a unique herd improvement innovation precinct • Strong international relationships	• Critical mass of data still required to fulfil the vision for DataVat • Substantial reliance on Dairy Australia funding, which is under pressure • Key person dependency and burnout risks • Little engagement with milk companies, banks, farm advisors and other 'non-herd improvement' stakeholders • Use of genomic testing of female animals remains relatively low • Consultation with a heavily governed industry can slow development processes • Limited resources to take advantage of technological opportunities • Limited social media presence and corporate capability material that is not program-based

OPPORTUNITIES	THREATS
• Data services and analytics through DataVat to improve decision-making and provide predictive analysis • Upsurge in device connectivity, data volumes and computer speeds, plus rapid advances in automated systems and artificial intelligence / machine learning • Increasing uptake of inline milk measuring tools and other sensing technologies • Traceability and production transparency services • Changes in scale of farm operations and increased requirements for decision-making support, particularly for large farms • Greater private sector involvement and investment farms • Potential to leverage expertise and resources globally • Collaboration with other Australian ag sectors, e.g. red meat industry • Increased coordination to reduce duplication and improve efficiency of services • Flexible arrangements for accessing and maintaining key expertise • Provision of new tools for client groups, e.g. bull companies	• Declining numbers of dairy cows is shrinking the market for products and services • Farm and industry profitability remain volatile and under pressure • Ongoing reduction in herd test participation • Reliance on third party cooperation on data access • Difficulty in industry access to some phenotypic data, e.g. data collected from inline milk meters • Competition in herd improvement and data services • Pressure on levy funding • Need for greater efficiency and capacity to offer herd improvement services on-farm • Herd improvement not clearly linked to profit by all farmers and service providers • Slow adoption of new innovations • Increasing activism and consumer scrutiny on how animals are treated and milk is produced, including provenance, food safety, animal treatments, dehorning, timed AI programs, etc. • Potential pressure on live exports to China • Growing use of proprietary breeding values and indices • Ongoing need to work with industry opinion leaders • Challenges to extension and training in the industry • Herd test staff and others have little opportunity to improve skills and service provision through training • Milk production recording viewed predominantly as a management tool for managing cell count, inconvenient for farmers and technologically limited

2.6 Insurances

DataGene insurances are placed through a broker to obtain the best possible policies and market prices with reputable insurance companies. Renewal is during July each year. The current policies are as follows:

Insurance Type
Business Insurance
Public liability and Product liability
D & O Insurance
Professional Indemnity Insurance
Cyber Insurance

3 Operating Plan

3.1 Delivery Priorities for 2019/20

Delivery Priorities for 2019/20 for each strategic Priority area are listed below:

Data-driven Decisions

- Establish a robust, industry-level data governance framework
- Integrate into DataVat, data from Herd Test Centres, Breed Societies and prioritised software & dairy automation companies
- Deliver a redeveloped HerdData App, Phase II of Fertility Focus Report and new reports for Herd Test Centres
- Collaborate with industry partners to develop new decision support tools utilising DataVat

Animal Performance

- Launch and/or renew breeding values for Genomic Calving Ease, Gestation Length, Type and Clinical Mastitis
- Move to weekly ABV runs
- Integrate messages from ImProving Herds into industry extension and marketing
- Increase the number of females genomically tested

Herd Improvement R&D

- Deliver a new tool to Herd Test Centres that uses MIR technology to predict performance
- Initiate and complete National Breeding Object Review
- Develop a business case for use of MIR in evaluations
- Evaluate and potentially implement the use of weighted SNP solutions in genetic evaluation

Service Provision

- Maintain collaboration with industry stakeholders through regular Standing Committees, User Groups and other meeting opportunities
- Complete security audit and penetration testing of DataGene systems
- Explore options to provide software products and development services to international clients
- Ensure appropriate DataGene staff capability to deliver support and development

A key focus over the first half of the financial year will be adjustment to the new production environment following the implementation of GES NP and DataVat. The new system, with the resulting requirement for role changes due to automation and process simplification, will affect both the Genetics & Delivery and the IT, Strategy and Business Development units. Planning for this change is underway and will be undertaken in conjunction with Agriculture Victoria.

During the year, a program of goal setting, performance review, peer review and development planning will be maintained. Clear training and development plans will be implemented for all staff as they shift into the new production environment with GES NP and DataVat.

3.2 Governance

DataGene is governed by seven-member skills-based Board. Board members are elected at an Annual General Meeting on their knowledge and experience in dairy, herd improvement, finance and

governance. The Board must include three Directors with direct expertise in dairy farm management. Directors are entitled to serve a three-year term and up to three consecutive terms (i.e. nine years). The ongoing rotation of Directors ensures the ongoing refreshment of skills and experience on the Board.

Two Board members are due for election at the AGM in November 2019, one position being that reserved for nomination by Dairy Australia. DataGene will conduct an open call for nominations in Spring 2019 for the open position and request a nomination from Dairy Australia. The nominations committee will nominate the candidates who will stand for election at the AGM.

The Board and management will review significant company policies according to the agreed rotation schedule for 2019/20.

DataGene's Standing Committees enable members to have direct influence over DataGene's priorities and program activities. These committees are not simply advisory bodies, but exercise authority as delegated by the DataGene Board in areas of industry policy and guidelines.

These committees comprise individuals from within the dairy industry and herd improvement sector who possess relevant skills and experiences. Standing Committee members are nominated by stakeholders and appointed by the DataGene Board. Each Standing Committee is chaired by a member of the DataGene Board and includes at least one member of the DataGene management team.

DataGene's Standing Committees are:

- **Genetic Evaluation Standing Committee** - provides advice and recommendations to the DataGene Board on specialist matters in relation to genetic evaluation and related technologies.

- **Data Services Standing Committee** - provides advice and recommendations to the DataGene Board on specialist matters in relation to opportunities for new tools and services that help farmers make data-driven decisions.

During 2019/20, a **Herd Test Centre Committee** (HTCC) will be formalised, operating as a sub-committee of DataGene similar to existing Standing Committees. The Herd Test Centre Committee will make recommendations and proposals to DataGene Board and management, and respective centre Boards (or equivalent) on herd test-related matters, including software and service development.

The Data Governance Group is a technical group that develops policies and processes for the use and sharing of data. This will be increasingly crucial as DataVat becomes operational and decisions around access to, and use, of data become more complex. The Data Governance Group makes detailed technical decisions about the way data is handled, presented and disseminated to industry. The Data Governance Group is a sub-group and not one of the main Standing Committees. It exists primarily to help establish the guidelines for DataVat and works closely with the Data Services Standing Committee. In the following diagram, it is shown as not connected to the main reporting lines to demonstrate its unique position.
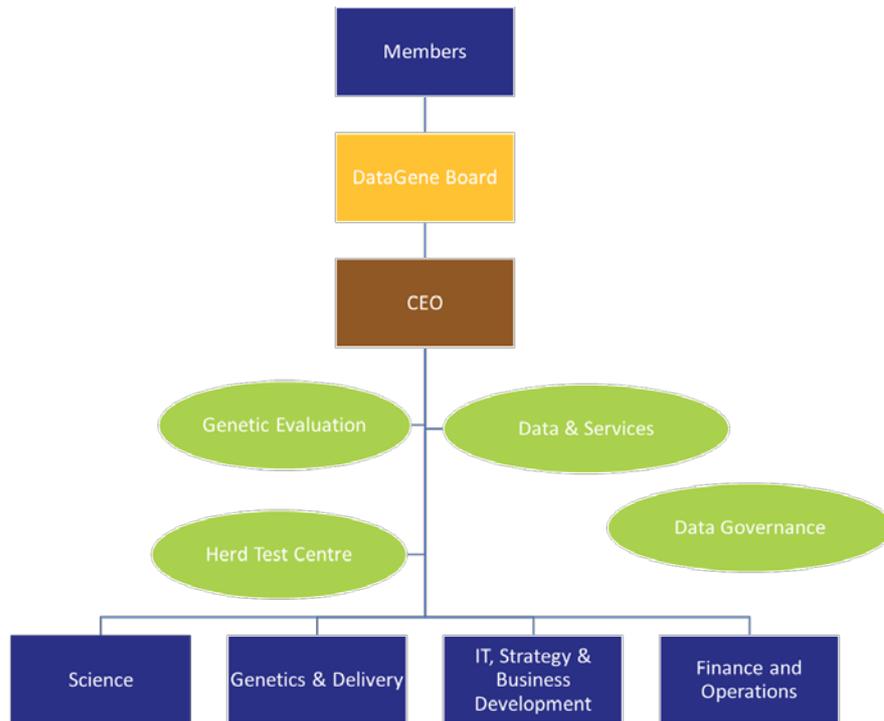
The Genetic Evaluation Standing Committee has been established and has met to help prioritise projects that are presented in this AOP. The Data and Services Standing Committee has not been as active as the other Standing Committee since it did not have the history and immediate policy questions that arise out of genetic evaluation. The group will meet at least once in 2019/20. The newly established Herd Test Centre Committee has been very active in 2018/19 and this is expected to continue in 2019/20. The Data Governance Group will grow in importance as DataVat expands.

DataGene will continue to work pro-actively with its users of DataGene Centre software as well as its farmer facing software, such as HerdData and the Good Bulls App. This work with users will ensure a better alignment of resources to meet user needs and help to prioritise the development of improvements to DataGene software solutions.

3.3 Delivery Channels, Marketing & Communications

With the strategic priorities clearly in mind, DataGene's delivery priorities are developed with its stakeholders and Board, while the actual delivery of products and services is driven by its staff. There are both direct and indirect channels for delivering products and services to DataGene clients, only some of which are monetised.

Direct
- Good Bulls Guide and App
- DataGene website
- DataVat
- ABV(g) reports to Service Providers ($)
- Bull proofs to bull companies ($)
- Project management services to industry bodies ($)
- Centre and Inventory Software to service providers ($)
- Software development services to industry ($)

Indirect
- Herd Test Centre distributors of the HerdData App ($)
- Herd Test Centre distributors of the Herd Test Dashboard
- Extension messages through RDPs to farmers
- Extension messages through Service Providers to farmers

Marketing and communications have been identified for several years as key priorities for herd improvement. The DataGene marketing and communications plan is based on the deliverables coming out of the AOP, corporate communications needs, and support required for DataGene's extension program. Each product being delivered will have its own sub-plan, such as the new Gestation Length breeding value and the Genetic Futures and Fertility Focus Reports.

DataGene's main communications objectives focus on: encouraging the use of Australian Breeding Values and indices; promoting the use of herd recording and data collection; supporting the launch and continued use of new services, products and tools for industry; and building awareness of the DataGene brand and reputation. The objectives will be met using a variety of collateral, resources and delivery vehicles.

The target audiences for DataGene marketing and communications are varied and have different needs. A few examples include farmers, from elite breeders to the non-interested, members, herd improvement industry service providers, collaborators, industry bodies. The market segmentation work recently completed by Dairy Australia offers a good insight into the dairy farmer segments and can help inform the creation of campaigns.

DataGene continues to increase the amount of communication and engagement with its stakeholders, but there is still additional work to do. The number of emailed updates and access to the quarterly reports etc, will be increased and GeneMail will be continued. For instance, two priorities will be timely release of quarterly reports to members and improving the level of communication with Ginfo farmers. The Ginfo forums held in conjunction with the National Muster in May 2018 and Herd '19 were successful meetings of Ginfo collaborators. This one-on-one communication and small group interaction are important in building a collective vision of the future.

The next 12 months will continue to focus on using key herd improvement messages to push awareness of herd improvement. A key aspect of this will be engagement with advisors, both those involved in herd improvement and those who are unconnected. DataGene will need to work closely with Dairy Australia to context herd improvement into the whole farm business so that the messages align across the industry. This will require ongoing work with members and the broader herd improvement industry to align messages and drive herd improvement.

3.4 Annual Work Plan & Key Performance Indicators

3.4.1 Strategic Priority 1 – Improved Decision Making From Data

	Activity	*Completion Date*	*KPIs*	*Major Dependencies*
1.1 DataVat	Continue development of DataVat	31 December 2019	Connections available for Holstein and Jersey Australia, and all herd test centres to connect to DataVat	Willingness of 3rd party service providers to connect to CDR Necessity of finalising all GESNP components
		31 December 2019	Connections available for Jantec, Easydairy and Dairy Data to connect to DataVat	Willingness of 3rd party service providers to connect to CDR Necessity of finalising all GESNP components
		31 December 2019	Complete deliver of new Fertility reporting to DataVat for InCalf	Dependent on IT resources Willingness of 3rd parties to help develop new tools Funding availability
		30 June 2020	At least one major international dairy automation company connected	Willingness of 3rd party service providers to connect to CDR
		30 June 2020	Add one additional report or tool to DataVat	Dependent on IT resources Willingness of 3rd parties to help develop new tools
		30 June 2020	Establish strong industry data governance framework	Willingness of industry to engage on data governance
	HerdData is taken up by farmers and improved	31 December 2019	Incorporating industry data collection needs and a customer review	Willingness of industry to support HerdData Availability of customers for the review
1.2 Enable Innovation	Herd Reporting Platform – Herd Data Report	31 December 2019	Explore development and implementation of single herd reporting software platform Create Selective Dry Cow Tool	Willingness of herd test centres to agree to and fund development.
	Standardisation of MIR spectra	31 December 2019	Implement a process for standardising MIR spectra collected from different machines	Willingness of herd test centres to agree to and implement process Ag Vic availability of resource

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	Activity	Completion Date	KPIs	Major Dependencies
	MIR management tool	30 June 2020	Develop a proof of concept tool into Centre/DataVat based on MIR technology, with extension and marketing campaigns designed.	Science is still in progress Requirement for changes by both Herd Test Centres and farmers Complexity of data pipeline Engagement of other farm advisors Standardisation of MIR spectra

3.4.2 Strategic Priority 2 – Increased Animal Performance Through Herd Improvement

	Activity	Completion Date	KPIs	Major Dependencies
2.1 Innovation in Breeding Values	Release Gestation Length and Genomic Calving Ease Breeding Values	30 September 2019	Gestation Length and Genomic Calving Ease breeding values is included in ABV run, with associated communications and engagement plan implemented	Ability to implement new models dependent on finalising the testing environment of GESNP
	Include genomic information in Red Breed evaluations	31 December 2019	Methodology for implementing genomic breeding values for Aussie Reds, potentially using Nordic evaluations	Dependent on science results, willingness of parties to cooperate and an acceptable business model that can be agreed
	Implementation Plan complete for weighting SNPs based on 1000 bulls project	31 December 2019	Agreed plan with DairyBio for the implementation weighting SNPs	Dependent on science results
	Release of Mastitis Breeding Values	28 February 2020	Mastitis breeding value is included in ABV run, with associated communications and engagement plan implemented	Ability to implement new models dependent on finalising the testing environment of GESNP
	Evaluate and report broader range of haplotypes	31 March 2020	Agree and implement haplotypes reporting	
	Weekly ABV Runs	1 June 2020	Weekly releases of ABVs	Dependent on GESNP working smoothly, from data loading to report delivery, and within a timeframe that allows weekly runs

	Activity	Completion Date	KPIs	Major Dependencies
	New SNP chip or SNPs being used for all Australian genomic testing	30 June 2020	All genomic service providers have access to the new XT SNP chips or can add the SNP themselves	Dependent on the willingness of third parties to cooperate
2.2 - Increase Farmer and Industry Services Uptake	Refresh and implement an extension strategy	30 September 2019	Extension Strategy refreshed and implementation commenced	Dependent on the cooperation of DA and Herd Improvement Industry to integrate the messaging
	Work with industry to promote herd improvement messages	30 June 2020	Work with DA's FARM team to integrate herd improvement messages into extension material	Requires investment in time and resource from DA
		30 June 2020	Work with RDPs to develop material for use by the RDPs	Requires investment in time and resource from RDPs
		30 June 2020	Work closely with Herd Improvement Industry and farm advisors to develop material for use by industry	Willingness of third parties to cooperate
	National Breeding Objection Review	30 June 2020	Complete NBO and recommendations ready for implementation in December 2020	Reliance on DairyBio scientists for economic value and other research Reliance on Dairy Australia for some market data

3.4.3 Strategic Priority 3 – Improved Animal Performance Through Research and Development

	Activity	Completion Date	KPIs	Major Dependencies
3.1 – Improve Traits	Improve Type Breed Values	30 November 2019	Method for increasing range of genomic type implemented Implement composite traits Implement new pedigree model Implement updated type model, final timing subject to Standing Committee.	DairyBio research outcomes Science team availability Availability of TMA resources Ability to implement new models dependent on finalising the testing environment of GESNP
	Explore improvements in young heifer genomic breeding values	31 December 2019	Report detailing potential improvements to heifer genomics	Science team availability Dependent on finalising the testing environment of GESNP

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	Activity	Completion Date	KPIs	Major Dependencies
	Lameness data initiative and other data collection activities for DairyBio	30 June 2020	Develop and implement lameness data collection for DairyBio. Coordinate data collection for other DairyBio projects as required	DairyBio research outcomes 3rd party service providers to collect data Willingness of suitable farmers to participate
	Increase Ginfo herds to 200 herds and maintain data collection activities	30 June 2020	27,000 genotypes 8,400 Linear Type Evaluations	Service provider data collection Willingness of farmers to participate Reliance on a shared cost model for calf testing
3.2 - Improve Accuracy	Pass Interbull Tests	30 September 2019	Pass key Interbull test for traits and parentage validation	Ability to implement new models dependent on finalising the testing environment of GESNP
3.3 - Improve Interbull data linkage	Assess implementation requirements for Interbull exchange of parentage genotypes and genetic defects	30 June 2020		

3.4.4 Strategic Priority 4 – Improved and Diversified Service Offerings

	Activity	*Completion Date*	*KPIs*	*Major Dependencies*
4.1 – Improving software offering	Development of Animal Health and Welfare Proof of Concept	31 August 2019	Animal Health and Welfare Proof of Concept released through DataVat	Reliance on DA for funding, direction and extension
	Development of Phase II Body Condition Score App	31 December 2019	BCS app Phase II released	Reliance on DA for staffing, funding, direction and extension
	Development of Natural Capital App Proof of Concept	31 December 2019	Natural Capital App Proof of Concept released	Reliance on DA for funding, direction and extension
	HerdData Redeveloped	31 December 2019	HerdData Ver 2 released	
	Improve pipeline to deliver female genomic breeding values	31 March 2020	Connections available for genomic service providers systems to talk directly to DataVat	Willingness of 3rd parties to help develop pipelines
4.2 – New Business	Contract two new clients	31 March 2020	Two new clients with contracted projects	

4.3 – Improving Capability	Develop training and development plans for all staff	30 August 2019	Development and training plans implemented for all staff	
	Election for 2 Board positions	14 November 2019	A professional selection process results in the election of 2 directors at the AGM	
4.4 – Improving Collaboration	Establish and maintain strong communication with stakeholders through effective Standing Committees	30 June 2020	Hold Data and Services Standing Committee meetings as required	
		30 June 2020	Hold a minimum of 2 meetings of the Genetic Evaluation Standing Committee	
		30 June 2020	Hold a minimum of 2 meetings Herd Testing Standing Committee	
	Establish and Maintain effective communication with users	30 June 2020	Maintain communication with users of Centre, HerdData and the website, including any necessary training in use of GESNP and DataVat	
	Marketing and communications plan completed based on 2019/20 AOP	30 August 2019	Marketing and communications plan completed based on 2019/20 AOP and integrated with extension	

3.5 Performance Metrics

The Board and management monitor a variety of performance metrics on a regular basis. These cover the genetic merit of the national herd, the market acceptance of DataGene products and services, herd recording levels, and extension and communication reach. The primary metrics for DataGene are:

1. The rate of genetic gain of sires of cows for BPI exceeding $18/cow/year;

2. The level of female genomic testing increasing annually by at least 15%; and

3. The number of cows with phenotypes in DataVat increasing annually.

3.6 Financial Outlook

Delivery of new business projects and the transition funding from Dairy Australia, in conjunction with tight fiscal control, equates to a budgeted operating surplus excluding non-cash items in 2019/20. The inclusion of depreciation and amortisation, which substantially increases in 2019/20 with GES NP coming on-line, equates to a deficit at the budgeted year end. Income is projected to fall due to a number of one-off income lines included in 2018/19, such as reimbursements for office fit out and additional income from the Health Data for Healthy Cows and ImProving Herds projects.

The 2019/20 budget has been prepared with the background of DataGene maturing from a start-up to a more mature business. Key projects including Ginfo and DairyBio4, the continued connection of wider data sources and maintenance of GES NP and DataVat, services for Herd Test Centres and new business development opportunities present clear income streams. Resources and associated expenditure budgets have been kept very tight whilst enabling the delivery of these activities.

Cashflow will continue to be closely monitored. The closing 2019/20 position is predicted to be around the same level as the closing position in 2018/19, presenting a close to break-even year. New business development will be central to potentially improving DataGene's cashflow position. In turn this has a clear impact on the organisation's cash position in the Balance Sheet.

3.6.1 Assumptions

The financial outlook has been prepared using the following assumptions:

- Ginfo and calf testing expenditure is at the same level as respective income for these items. There are no margins involved.

- New business opportunity leads have been identified for 2019/20 and reflected in income. These leads will need to be converted into live projects.

- International new business opportunities have not been incorporated into income or expenditure.

- GES NP and DataVat is live. There will be ongoing maintenance costs and continued development in accordance with deliverables in the AOP.

- Depreciation and amortisation appear in the Income Statement and Balance Sheet, but do not impact on cashflow.

3.6.2 2019/20 Budget

DATAGENE BUDGET INCOME STATEMENT	Forecast 2018/19	Budget 2019/20
Total Income	4,825,000	4,634,000
Total Expenditure	5,046,000	4,513,000
Operating Surplus/(Deficit) excl non-cash	**-221,000**	**121,000**
Depreciation & amortisation	289,000	552,000
Surplus/(Deficit) incl non-cash	**-510,000**	**-431,000**

DATAGENE BUDGET BALANCE SHEET	Forecast 2018/19	Budget 2019/20
Assets	8,736,000	8,120,000
Liabilities	4,130,000	3,851,000
Net assets	**4,606,000**	**4,269,000**

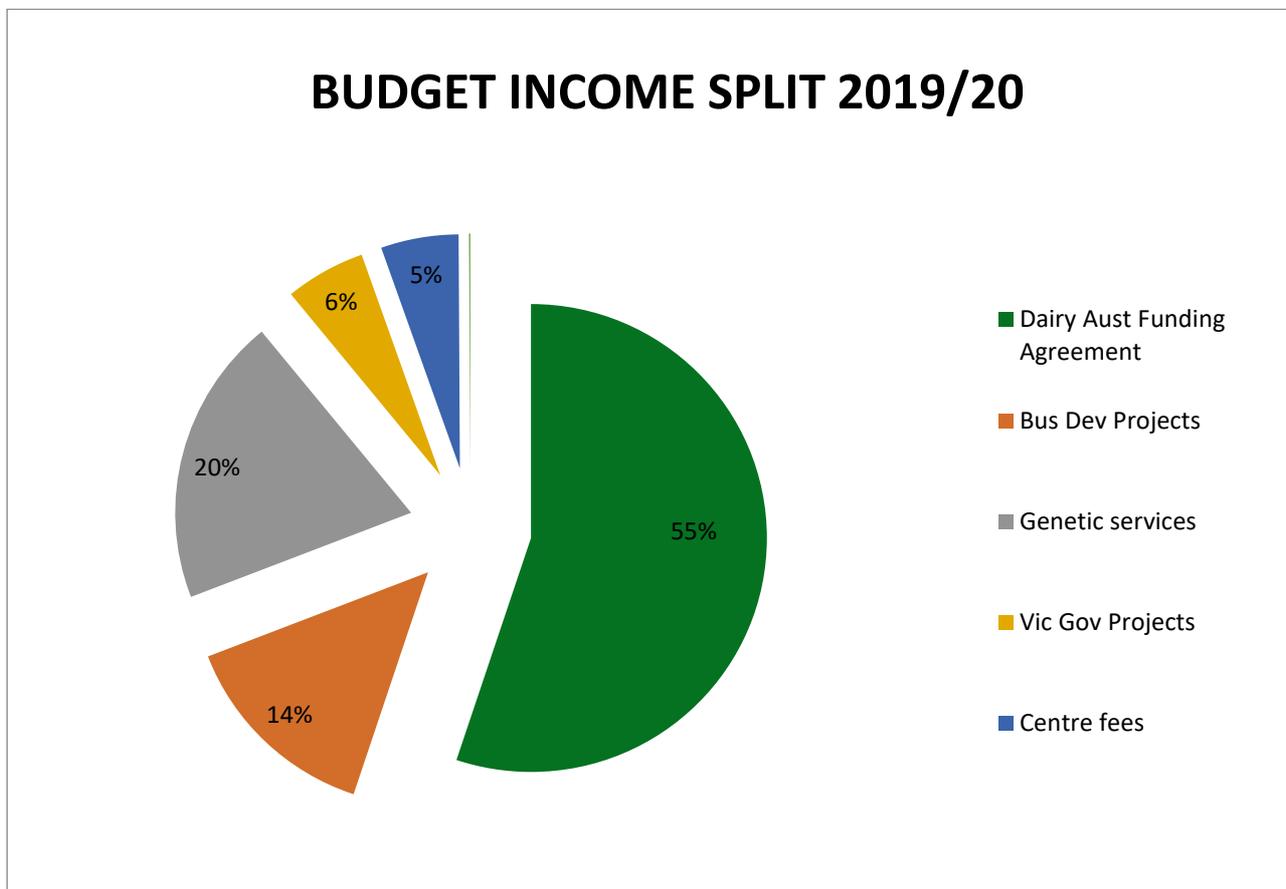| DATAGENE BUDGET CASHFLOW	Forecast 2018/19	Budget 2019/20
Cash at beginning of the financial year	1,483,000	305,000
Net cash provided by operating activities	-870,000	101,000
Cash used in investing activities	-308,000	-25,000
Cash at end of the financial year	**305,000**	**381,000**

3.6.3 Income commentary

DataGene's main revenue streams include core funding from Dairy Australia (which has been agreed and will be in place for the next five years) and genetic services and centre software services provided to customers. A key goal for DataGene remains to reduce Dairy Australia's percentage share of total revenue over the years ahead. This will need to occur through development of new services, such as data access, reports and tools, rather than simply the raising of existing fees.

DairyBio4 investment will come from Agriculture Victoria and new projects generated by the business development team.

Ginfo funding continues as a pivotal part of the overall Dairy Australia funding agreement.

Genetic evaluation services comprise service fees associated with ABV(g), access fees, calf testing, NASIS registrations and workability. Given the variances around export heifers during 2018/19 it has been decided to keep the income budget around this activity at a conservative level of $100,000 in 2019/20.

New business leads are predominantly delivering projects to Dairy Australia which include the second and third phases of work delivered during the latter part of 2018/19, a new app platform and new projects, including a Forage Value Index, which will need to be converted to project funding agreements.

BUDGET INCOME SPLIT 2019/20

Pie chart legend:
- Dairy Aust Funding Agreement — 55%
- Bus Dev Projects — 14%
- Genetic services — 20%
- Vic Gov Projects — 6%
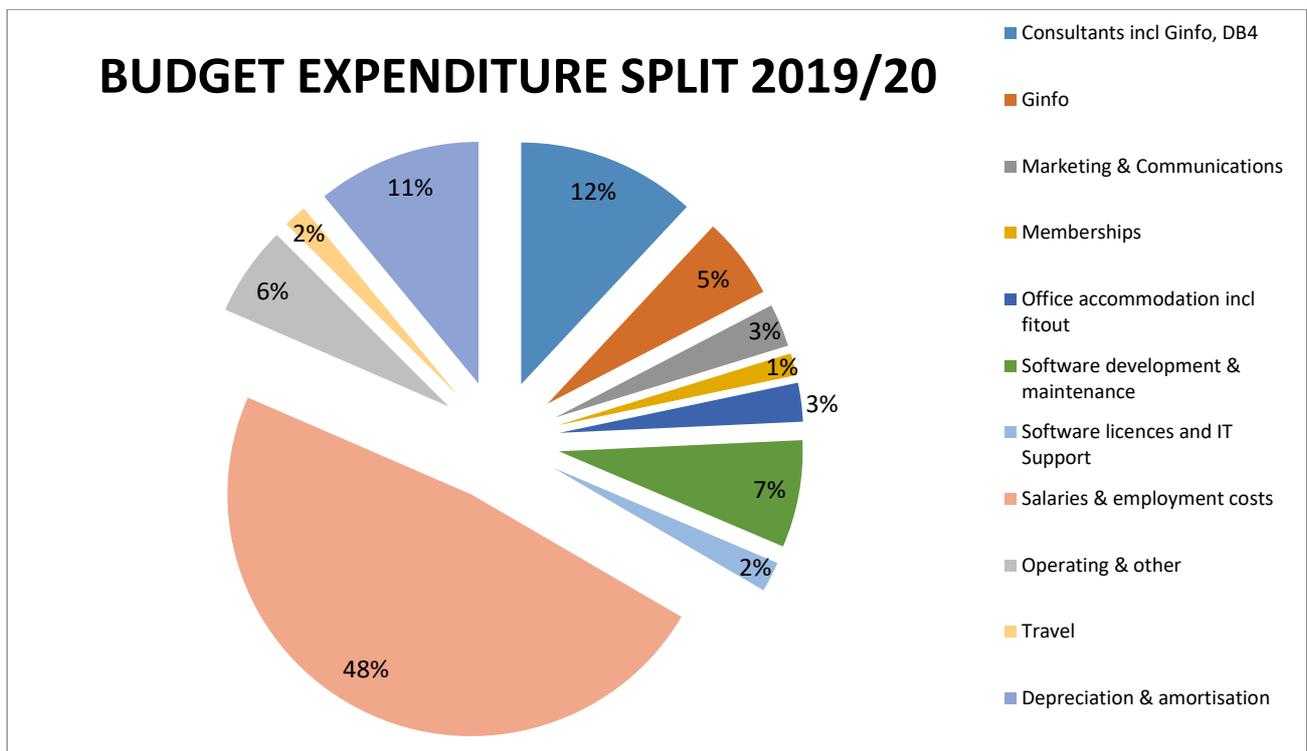- Centre fees — 5%

3.6.4   Operating expenditure commentary

Salaries and associated costs are again the largest expenditure item and equate to 48% of total expenditure. The second largest item of expenditure relates to consultants/provision of service. The large portion of this money is for the external costs associated with delivering Ginfo calf testing and DairyBio4.

Software maintenance and ongoing GES NP and DataVat improvements will continue to be project managed by DataGene with the offshore programming skills being provided through our ongoing relationship with TMA in Vietnam.

Other expenditure items are at similar levels to the previous financial year.

As has been demonstrated in previous financial years, all expenditure will continue to be well controlled throughout the year.   Expenditure would be reviewed in line with income and would be adjusted accordingly in order to maintain a break-even budget.

BUDGET EXPENDITURE SPLIT 2019/20

- Consultants incl Ginfo, DB4
- Ginfo
- Marketing & Communications
- Memberships
- Office accommodation incl fitout
- Software development & maintenance
- Software licences and IT Support
- Salaries & employment costs
- Operating & other
- Travel
- Depreciation & amortisation

3.6.5   Capital expenditure

Following the careful monitoring of cloud service usage through the development and early operations of GES NP and DataVat, the DataGene IT team recommended that primary services should be delivered through in-house servers. Maintenance agreements have been put in place for the older servers to ensure that they continue to be supported as they move closer to the end of their life. New servers are due to be purchased in June 2019 to provide increased disk storage. The servers are supported by internal resources.

The 2019/20 capital budget is $25,000 to provide new and replacement notebooks, server switches and disks.

3.7 Key Current Risks

The risk management framework has been in place since 2017 and provides an efficient mechanism for Board and management to monitor and address risks. It is updated at least monthly and reviewed at each Board meeting and each Leadership Team meeting.

Management and the Board have identified the key risks facing DataGene in the coming 12 months. These are presented below, along with their mitigation strategies and the risk number from the May 2019 Risk Register.

Risk # 1	Likelihood	Consequence	Rating	Residual Risk
Funding Risk	Possible	Major	Very High	High
Context, Cause and Consequences:				
A key business risk is that of Dairy Australia funding falling due to milk production falling to a lower level, levy polls reducing the levy rate or changing priorities within Dairy Australia. This would put pressure on DataGene's budget as most of its funding currently comes from Dairy Australia. There is some risk that ongoing funding of the reference population through Ginfo is not financially sustainable. In this case, the broader dairy industry does not recognise the magnitude of benefits or a model cannot be agreed among beneficiaries to fund the cost of the reference population. This would leave the cost of maintaining the reference population to be borne by Dairy Australia alone or require the program to be wound down.				
Controls, mitigations and management actions:				
The key risk of Dairy Australia funding will be mitigated by the ongoing effort to find additional sources of revenue for DataGene. One crucial focus for new revenue is increasing the level of female genomic testing. Another focus will be using the capability within DataGene to develop projects for other industries or countries. In addition to increasing funding through female testing, another mitigation for Ginfo funding will be to collaborate with other program areas within Dairy Australia to ensure full value is achieved from the 200 herds, demonstrating the value of the initiative to industry.				

Risk #10	Likelihood	Consequence	Rating	Residual Risk
Personnel Risk	Possible	Moderate	High	High
Context, Cause and Consequences:				
A key risk to the ongoing operations of DataGene Centre software is the loss of key personnel. Retaining staff who combine both knowledge of the Delphi programming environment and the specifics of the Centre application is important, especially during the transition. In the short term, the loss of the key programmer would require additional resources to mitigate. Loss of key personnel in the ABV team or the senior management level also produces a risk of relationship, knowledge and capability loss to DataGene. Staff are at risk for burnout after a sustained effort to finalise GES NP and DataVat.				
Controls, mitigations and management actions:				
Overall, the risk to DataGene Centre software is mitigated in the medium term by integration into DataGene so that there is a wider skillset available within the organisation and less reliance on individuals. A transition to common tools will increase the availability of programmers with appropriate knowledge. Additionally, the relationship between DataGene and all its employees should be strongly maintained and regular reviews performed. The more general risk from the ABV team and senior management is mitigated by ensuring there are multiple people able to perform critical tasks and by constructing a Leadership Team capable of maintaining key functions and relationships after any departures. Work with staff is ongoing around morale and providing staff with time away from work to recover energy levels.				

Risk #15	Likelihood	Consequence	Rating	Residual Risk
DataVat User Risk	Possible	Major	Very High	High

Context, Cause and Consequences:

There is some risk that that data providers do not implement the necessary changes within their own systems or processes to provide data to and allow access to DataVat. If key data providers do not do so, this would ultimately reduce the effectiveness of the DataVat.

Issues around data security and privacy of data need to be dealt with to the satisfaction of all users to ensure they participate in the DataVat.

Controls, mitigations and management actions:

Early and continued communication with the providers will ensure alignment and awareness of the project. The single point of animal information will be of significant benefit to all of them as their clients are requesting such connectivity. This will incentivise them to implement the necessary changes. In addition, the connection tool will allow DataVat to talk to any system using almost any format, which will reduce the need to significant change early in the process.

Development and operation of DataVat will comply with ongoing compliance obligations under Australian Privacy Principle (APP) 1.2. DataGene will undertake penetration tests and security audits on a regularly scheduled basis.

Risk #16	Likelihood	Consequence	Rating	Residual Risk
Ginfo Execution Risk	Rare	Moderate	Medium	Medium

Context, Cause and Consequences:

The success of Ginfo relies on ongoing detailed on-farm phenotype recording by farmers to use for genomic evaluations. A risk is that the project is unable to source suitable herds, because farms do not have adequate on-farm data recording to determine accurate high-quality phenotypes, are not prepared to pay a portion of genotyping costs, and/or do not reflect the structure and location of overall Australian herds.

Controls, mitigations and management actions:

Developed a rigorous acceptance process.

Minimise cost to farmers by seeking in-kind support from industry.

Provide farmers with benefits that will recognise and reward the additional value of exceptional data. Benefits could include early access to new genomic breeding values and tools, discounted semen prices, subsidisation of genotyping of non-essential animals.

Create a sense of community amongst Ginfo farmers so that as a group, they see the purpose of their contribution and see value in working with industry.