harmonic analytics

Data Mining Provides **Valuable Insight** for Beef and Lamb New Zealand

Beef and Lamb represents New Zealand sheep and beef farmers. They bring farmers innovative tools and services, plus credible information and analysis to help farmers make the best decisions for their business.

"Harmonic's robust analytical approach was very valuable to us. The resulting data is useful to support business planning and strategic development tools. We discovered some unexpected insights, gaining a more in-depth understanding of the key attributes, variables, and profit drivers of top sheep and beef farms."

Richard Wakelin, General Manager, Farm

THE BUSINESS CHALLENGE

Understanding the key, controllable attributes of profitable beef and lamb farms has been a constant challenge for the sector since 1952 when farm surveys began.

Beef and Lamb New Zealand wanted to understand what the top 10% of farmers were doing and to identify the consistent patterns across this group of farmers.

THE SOLUTION

Knowledge Discovery – New Value from In-depth Data Analysis

Harmonic Analytics completed a comprehensive data mining exercise for Beef and Lamb New Zealand, to extract new meaning from their data. We examined the relationships between the variables as well as their effects upon farm profit.

Advanced Data Mining & Statistical Techniques

"Data mining and multivariate analysis are useful techniques for discovering hidden trends and patterns and for revealing new insights", says Shirley Wu, Chief Analytics Officer.

The project included data cleansing and preparation, followed by applied data mining techniques to understand what the top farms were doing. Harmonic designed a statistical model to associate farm attributes with profit, and to identify the most important profit drivers (for specific farm classes).

RESULTS AND BENEFITS

Clear insight into profit drivers amongst a myriad of attributes

The results provided Beef and Lamb New Zealand with real insight into the key profit drivers and attributes that characterise top sheep and beef farms. A total of 13 variables emerged as important profit drivers.

Key Findings:

- Identified the key attributes of top 10% of sheep and beef farms
- Identified the top 13 profitability drivers — across 900 variables
  - Variables could be separated into consistent factors (e.g. lambing percentage) and year-dependent factors (e.g. wool value).

Key Insights:

- Widening of profit variability over time has occurred across farm classes.
- Variation of profit is not related to the age of the farmer, level of debt or other common understanding.
- The use of farm data is a key driver for management decisions
- How farm data is used is important and creates a jump in performance.

Harmonic Analytics is a data science company. We provide custom business analytics and software tools. With a proven track record for solving complex business problems, we treat and interpret data for smart decision making.