

# MONASH INDUSTRY TEAM INITIATIVE (MITI)

## MILK MODELLING FOR FUTURE SUCCESS

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### ABOUT THE COMPANY

Fonterra Cooperative Group is the world's largest exporter of dairy products, a leader in dairy science and innovation, owner of a significant portfolio of global brands, and a partner to many of the world's leading food companies. Fonterra is headquartered in New Zealand, with offices in more than 40 countries world wide. Australia is Fonterra's largest milk pool outside of New Zealand and home to some of the country's favourite dairy brands.



### THE PROJECT

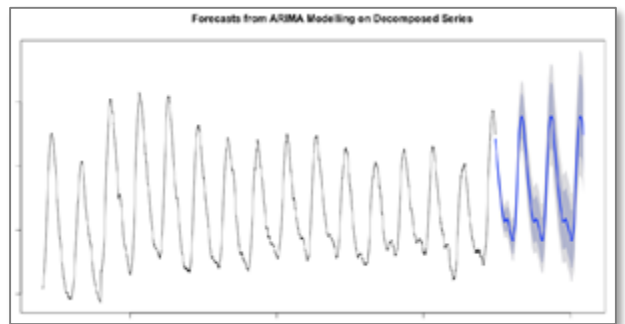
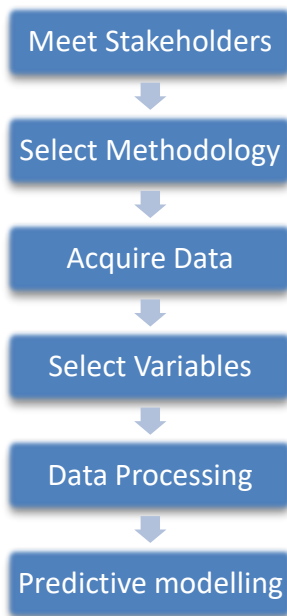
The project aimed at developing a statistical milk forecasting model that would enable Fonterra Australia to accurately forecast milk supply.

The model would enable the business to more effectively forecast and plan for short, medium and long term scenarios, ultimately assisting the business to become more efficient in the Australian dairy industry.

### THE MODEL

A multivariate ARIMA time series model was used to forecast milk production volumes for short, medium and long-term scenarios. The model was further optimised based on sub-regions within Victoria and Tasmania.

### WORKFLOW



The final model could also be used for scenario planning which enables the company to prepare for upcoming events that impact milk production.

### FUTURE RECOMMENDATIONS

- Incorporate additional independent variables in the model when data becomes available (cow numbers, calving patterns, breed and age of cow)
- Collect information from farmers about their future investment decisions
- Incorporate real-time weather information
- Forecasting is an ongoing process and further tweaking with variables may be required

### KEY LEARNINGS

- The dairy industry is a key player in the Australian economy and we learned a great deal about how this industry operates
- New experience in terms of working culture in contrast to our prior backgrounds
- The project helped us hone our data modelling skills and we also learnt from each other's strengths and weaknesses
- The project gave us a chance to apply our existing academic learnings to a real world scenario