

Leveraging technology from horseback

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Questions.

1. How has good cell phone coverage helped the farming business adopt technology across the farm?
2. What key areas has the technology focus on?
3. What is the potential risk of over reliance on technology?
4. How has electronic identification (EID) of sheep helped improve their flock?
5. What specific improvements in livestock performance has EID technology enabled?
6. Why is collecting lifetime data on animals important for decision-making?
7. How does technology help them use water more efficiently and meet environmental rules?
8. What farm tasks are now easier or more efficient because of mobile technology and apps?
9. How has virtual fencing helped protect the Ahuriri River and adapt to flooding?
10. What are some extra benefits the farm has gained from using virtual fencing?
11. How do you think technology and internet connectivity helped Omarama Station future proof their farming business?



Leveraging *technology* from horseback

From data-driven decision making to environmental monitoring and compliance, Richard and Annabelle Subtil have reaped the rewards of lucrative supply contracts by being able to prove any claim while maintaining traditional high-country values.

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Omarama Station stands as a testament to how traditional farming can integrate technology when there's reliable connectivity while maintaining a strong focus on good stockmanship. Unlike many rural properties that struggle with patchy mobile service, the 12,000ha Mackenzie Country station has capitalised on its relatively good cellphone coverage to implement various technological solutions that have transformed their farming practices and value-add opportunities with their products.

"Our cellphone coverage is actually pretty good right across the whole place," says Richard Subtil, who has

been farming at Omarama Station since 1996, joining his wife Annabelle's family heritage at the station since 1919.

This reliable connectivity has become the backbone of the station's technological integration, enabling real-time data transfer, remote monitoring, and efficient communication with the staff across the expansive high-country operation. Their journey with technology at Omarama Station began well before it became mainstream in New Zealand farming, being introduced to new concepts through their attendance at events such as the annual Platinum Primary Producers (PPP) Conference.

The technology used at Omarama Station is in three key areas; livestock

performance, irrigation management and environmental compliance.

Richard is quick to state that Omarama Station's approach emphasises the importance of understanding basic principles of farming alongside technological adoption.

"I've seen farmers use irrigation technology for example," says Richard. "It's great you can turn a pivot on and off on your phone, but if you don't have the fundamental farming knowledge to continue to go out and observe your paddocks you'll miss things."

He encourages the next generation on farm to be embracing of technology, but not at the detriment of the understanding of agricultural principles.



ABOVE LEFT The sheep yards were rebuilt for better flow for reduced stress on the sheep on hot days. **ABOVE RIGHT** The three-way auto-drafter is chained into place when needed. **LEFT** Henry Subtil mustering the eShepherd-collared cows showcasing the station's focus on blending traditional stockmanship with technology.

ACCESSING VALUE FROM TRACK AND TRACE

Richard Subtil worked in commodity trading before meeting Annabelle and moving to New Zealand, and was determined to build a farming business model that added value rather than being beholden to commodity prices.

As one of the first Icebreaker foundational supply partnerships, Omarama Station have integrated technologies that help them meet the stringent quality and sustainability standards as well as their beef contract with Aleph Inc, a large Japanese restaurant chain, and ANZCO Foods.

As early adopters, the Subtils began with electronic identification (EID) for their commercial merino flock, collecting comprehensive data for nearly a decade. This information has proven crucial for making informed selection decisions and improving overall performance metrics.

By tagging each sheep, they collect detailed data on genetics, health, and productivity, enabling precise breeding decisions and improved flock management. This data-driven strategy ensures their merino wool consistently meets Icebreaker's specifications.



“We need a fully traceable industry so that our markets we supply can pass the value back to the farmer.”

RICHARD SUBTIL, OMARAMA STATION

“It was the late Dick Ewing who convinced us to try out a three-way auto-drafter so we could use the EID tags to make decisions on performance,” explains Richard. “As well as introducing body condition scoring, our weaning percentages have improved from 90% to an impressive 120%, while lamb weights have increased from 16kg to 19.5kg.”

EID enables the Subtils to collect comprehensive lifetime data on each ewe, facilitating informed decisions on breeding and culling.

This data-driven approach allows them to identify top-performing animals and those that underperform, optimising flock productivity.

For instance, ewes consistently producing twin-bearing ewes twins are prioritised for preferential feeding, enhancing lamb survival rates and overall flock health while less productive ones are culled, ensuring the flock's overall quality improves over time.

Mobile technology streamlines daily operations using connectivity for everything from electronic ASD forms for livestock movements bluetoothed from the weigh scale in the yards, to syncing Farm IQ for tracking mob shifts and barcode scanning for chemical inventory management.

“The younger generation are more tech-oriented,” says Richard. “But these systems have significantly reduced administrative burdens at home at night, allowing staff to spend less time in the office and more time on productive farm activities.”



ABOVE LEFT In 2008 the Subtills' gravity-fed water scheme went in to run their pivot irrigation. **ABOVE RIGHT** The NIWA/ECan partnership lysimeter research trial is providing valuable data to future-proof their irrigation consent.

FUTURE-PROOFING WITH RESPONSIBLE IRRIGATION

The Subtills' approach to irrigation technology demonstrates their thoughtful implementation of solutions that make sense for their specific geographic context on shallow soils and the pressures of the impact on the Ahuriri River on their boundary.

Their primary challenge isn't water penetration but rather evapotranspiration, with measurements showing losses of up to 8mm of moisture on hot summer days. Combined with lysimeter data, this has allowed them to implement precise irrigation practices that maximise grass growth while minimising environmental impact from leaching.

Working with regional authorities and research organisations like NIWA and Environment Canterbury (ECan) to install a lysimeter – the first of its kind in the Waitaki catchment as part of a research trial, the initiative aims to enhance understanding of soil water dynamics and nutrient leaching in high-country farming systems.

The lysimeter measures water movement through soil, capturing data

on drainage, evapotranspiration, and nutrient transport. This information is vital for assessing the environmental impact of irrigation and fertilisation practices, particularly concerning nitrate leaching into groundwater.

With connectivity, both the Subtills can accurately monitor soil moisture and temperature from sensors at various depths through sensors combined with weather stations, which means they are only irrigating when necessary.

They also have soil moisture, allowing for precise irrigation management. The station proudly reports 99% water efficiency, meaning only 1% of water ever reaches the bottom of the soil profile, and that is only during high rainfall events.

"It means ECan can make sure that we're not leaching excess nitrates into the aquifer of the Ahuriri River, making contentious regulatory audits into a more straightforward process," explains Richard. "Why would we invest in a million-dollar irrigation system and not install something like this for \$75,000 as insurance to not lose our resource consent to irrigate?"

FACT BOX

- Richard and Annabelle Subtil
- Omarama Station, 12,000ha
- High-country merino and Angus breeding and finishing
- Eight centre pivots over 508ha of river flats.



Richard says objective evidence of their environmental stewardship such as lysimeters are crucial for maintaining regional council's ability to uphold water resource allocation by leading on the data that farming practices are not contributing to degrading water quality standards.

"Irrigation professionals have told me that some farmers can get a bit like 'drug addicts' with irrigating excessively," says Richard. "If you are irrigating onto cold soil temperatures or saturated water ground it not only leads to nutrient loss but also prolonged and reduced grass growth."



TOP LEFT Richard monitoring his cattle with eShepherd. **TOP RIGHT** Omarama Station has cellphone coverage across the majority of its 12,000ha. **MIDDLE LEFT** Annabelle and Richard have been at Omarama Station since 1996. **MIDDLE RIGHT** The station has eight centre pivots covering 508ha. **BOTTOM LEFT** Richard with son Henry who is recently home to the station. **BOTTOM RIGHT** A photo from the 2022 floods that saw the Subtills change their farming policy on the river flats.



VIRTUAL FENCING FOR FRESHWATER MANAGEMENT

Recently Omarama Station has implemented Gallagher's eShepherd virtual fencing for keeping cattle out of the Ahuriri River. The system allows for precise control of where cattle graze, ensuring they stay in designated areas.

"It's great for proving to ECan when a fisherman rings up to complain about a cow in or near the river," says Richard. "I can pinpoint on a map that was categorically incorrect."

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eShepherd uses solar-powered, GPS-enabled neckbands using cellular connectivity to function. It allows farmers to establish virtual boundaries via a digital interface. These collars emit audio cues, followed by mild pulses if necessary, to train livestock to stay within designated areas. This system enables precise grazing management without the need for physical fences, which is particularly beneficial in challenging terrains or areas prone to flooding.



TOP The Subtills use eShepherd on their cattle to be able to maintain grazing the Ahuriri river flats. **ABOVE** Cows with Gallagher's eShepherd. **RIGHT** Richard maintains technology enables them to farm, not taking away from traditional stockmanship.

Omarama Station was impacted by floods in winter 2022 which has led to eradicating willows that blocked up the water flow. Instead of re-fencing to accommodate the changing climate's uncertain flood levels, eShepherd will assist with moving cattle to higher ground and remain out of the floodwater as the levels rise.

There has been additional benefit with the virtual fencing technology that revolutionised grazing management by optimising pasture utilisation, which has led to the Subtills being able to increase cattle numbers. While still on horseback, it has meant for more efficient mustering by providing real-time location data for each animal too.

OMARAMA STATION'S NEXT GENERATION

Omarama Station's forward-thinking approach always has their two adult children at the forefront of their decision making. They have encouraged



Emma (27) and Henry (25) to spend at least a decade away working before returning to the farm. Emma currently works as a relationship manager in Australia for The New Zealand Merino Company and Henry returned home shortly after the exile after shepherding and shearing in the North Island.

This approach is to foster innovation and bring new ideas to the operation as did Richard and Annabelle with their time overseas.

"It's important for them to get to experience different farming practices, working within the industry and see new technologies as well as build valuable networks and perspectives

Answers

1. How has good cell phone coverage helped the farmers adopt technology across the farm?

Good cell phone coverage across Omarama Station has been the backbone for implementing various technologies. It allows real-time data transfer, remote monitoring, and instant communication with staff over their vast 12,000-hectare property. This connectivity supports tools like mobile apps, GPS tracking, irrigation control systems, and digital compliance tools.

2. What key areas has the technology focus on?

Technology at Omarama Station focused on three key areas:

- Livestock performance – using EID to track and improve animal productivity.
- Irrigation management – using sensors and weather data to water efficiently.
- Environmental compliance – monitoring soil, water, and animal movement to protect natural resources and meet regulations.

3. What is the potential risk of over-reliance on technology?

Over-reliance on technology can lead to farmers neglecting basic farming knowledge and observation. Richard Subtil warned that using tech like remote irrigation control is helpful, but if farmers don't still walk their paddocks and observe the land, they could miss important problems. There's also the risk of system failures, loss of skills, and dependence on strong connectivity.

4. How has electronic identification (EID) of sheep helped improve their flock?

EID tagging allows each sheep to be individually tracked for genetics, health, and productivity. This helps make informed breeding and culling decisions. The data helps identify top-performing animals and improves overall flock health and performance.

5. What specific improvements in livestock performance has EID technology enabled?

Thanks to EID and better management:

- Weaning percentages improved from 90% to 120%.
- Lamb weights increased from 16 kg to 19.5 kg.
- Ewes producing twins are now prioritised for better feeding, boosting survival and performance, while underperforming ones are removed.

6. Why is collecting lifetime data on animals important for decision-making?

Lifetime data helps farmers understand long-term trends in each animal's productivity and health. It supports:

- Better breeding choices.
- Smarter culling decisions.
- Targeted feeding and care for high-performing animals.
- This ensures the flock improves generation after generation.

7. How does technology help them use water more efficiently and meet environmental rules?

Omarama uses soil moisture sensors, lysimeters, and weather stations to irrigate only when needed. This results in 99% water use efficiency, meaning very little water leaches beyond the root zone. These tools provide evidence to regional authorities that they are not polluting groundwater, which helps them keep their irrigation consent.

8. What farm tasks are now easier or more efficient because of mobile technology and apps?

Mobile technology helps with:

- Electronic Animal Status Declaration (ASD) forms – sent directly from the yards.
- Mob tracking through apps like FarmIQ.
- Chemical inventory management using barcode scanning.
- Staff communication and scheduling.

These tools reduce paperwork and save time, allowing staff to focus on hands-on farm work.

9. How has virtual fencing helped protect the Ahuriri River and adapt to flooding?

Using eShepherd virtual fencing, cattle are kept out of the Ahuriri River without physical fences. The collars use GPS and sound cues to train cattle to stay in certain areas. In floods, they help move cattle to higher ground without needing new fences, protecting both the river and livestock.

10. What are some extra benefits the farm has gained from using virtual fencing?

Additional benefits include:

- Better pasture management by rotating cattle more precisely.
- Increased cattle numbers due to improved land use.

- Easier and faster mustering using GPS data.
- Reduced cost and maintenance compared to building physical fences, especially in flood-prone areas.

11. How do you think technology and internet connectivity helped Omarama Station future-proof their farming business?

Technology and connectivity have helped Omarama Station become more productive, efficient, meet stringent quality and sustainably standards. By using tools like EID, irrigation sensors, and virtual fencing, they've:

- Improved animal performance and farm profitability.
- Ensured their merino wool consistently meets icebreaker's specific standards.
- Met and stringent quality and sustainably standards, protecting water and soil.
- Adapted to climate challenges, such as flooding.
- Reduced admin work, saving time for more valuable tasks.
- Prepared the next generation to take over a modern, resilient farming operation.