

Up to SPEED

“WE ARE GETTING CLOSE TO THE POINT WHERE THERE IS NO PLACE IN NEW ZEALAND YOU CANNOT GET SOME LEVEL OF INTERNET CONNECTIVITY.”

MIKE SMITH,
CHAIRMAN, WISPA

and the system cannot take any new subscribers.

He would also like to see market competition make connectivity more affordable and readily available to rural New Zealand.

“What we want to see now is more new companies providing the service to help drive down the cost and increase that capacity.”

Young expects to see other providers come into the market in the next 18 months with a technology that – at this stage – will only be capable of transmitting text via mobile phones.

However, this will still provide a huge benefit to rural areas that have previously experienced very isolated connection, if any.

“Even that is a great start from a health and safety perspective alone. We saw with Cyclone Gabrielle, just that ability to let your family know you were okay was critical.”

He expects cellular voice calls via satellite will still be sometime further,

THE CONNECTIVITY GAP BETWEEN URBAN AND RURAL NEW ZEALAND HAS STARTED TO CLOSE AS ACCESS TO MORE RELIABLE AND HIGHER SPEED INTERNET CONNECTION ENABLES NEW TECHNOLOGY AND INVESTMENT TO BRING THE RURAL ECONOMY LITERALLY UP TO SPEED, HELPING IMPROVE PRODUCTIVITY THROUGHOUT THE SECTOR.

SIGNIFICANT ADVANCES HAVE BEEN made in recent years to give rural New Zealand better access to internet and mobile phone coverage, with even better connectivity on its way for many farmers and growers – both in the office and out in the field.

Mike Smith, chairman of the Wireless Internet Service Providers Association (WISPA), says this is a tribute to the role technology changes and innovative problem-solving have brought to this space. Thanks in part to the input of New Zealand’s many local internet service companies, some smart workarounds are helping get more and more farmers online with internet speeds that can match those

enjoyed in the towns and cities.

“And we are still seeing plenty of work continuing through the Rural Connectivity Group with its operations shared among the big telco firms to keep building towers to deal with blackspots throughout the country, and this work is likely to continue for a while yet,” he says.

Smith is also reassured that rural internet continues to be one of the few national infrastructure initiatives that manages to maintain its momentum regardless of what government is at the wheel.

“It has been realised this is infrastructure that is not like building a bridge, you don’t just stop when it’s

finished. The technology is always advancing and shifting, demanding ongoing investment to keep up.

“We are getting close to the point where there is no place in New Zealand you cannot get some level of internet connectivity.”

Smith agrees that estimates of about \$500 million to get the remaining five percent of rural New Zealand connected with broadband are not too far off the mark, and an increasing variety of technology is presenting opportunity for rural communities to improve productivity through better connection.

“We are starting to see a combination of options. This includes more fibre

expanding through rural areas, setting the gold standard for speed. But ‘near fibre’ technology like cellular 5G is also coming through, with near fibre-like speeds.”

Regional wireless service operators, with their close links to the communities they work in, are now playing a big part in getting fibre rolled out well beyond the original programme overseen by the big operators largely in rural areas.

“We can see massive expansion of fibre into rural areas over the next three years,” he says.

While better access to broadband is generally going to provide an opportunity to improve productivity from the farm office, better connection out in the field is also required to enable more technology to be used by farmers.

Craig Young, chief executive officer of TUANZ, the Tech Users Association says the development of the Starlink satellite network is invaluable tech for filling in blank spots in rural New Zealand’s broadband coverage, but it’s not a silver bullet.

“We are already seeing areas of the country where users are at their maximum



WISPA chairman Mike Smith

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although companies have intimated it could be by late 2024.

Smith and Young see improved internet speeds in rural areas as a well-timed investment that is creeping ever further beyond its original urban hook ups.

As more and more farmers start to consider data-rich technology like digital mapping, self-driving equipment and the adoption of artificial intelligence (AI) technology, the need for that speed and capacity will only grow.

One such type of technology is “edge computing”, an emerging technology where data is processed near to where Internet of Things (IoT) remote devices and sensors are operating.

It removes some of the risk around remote “cloud computing” servers, effectively putting a small farm server close by and enabling access to data even when offline, unlike cloud computing services.

Increasingly overseas, such installations are being used on farms to oversee the masses of data generated by the likes of automated machinery and remote task operations.

“This is the type of technology that fibre enables and add 5G to that in those areas without fibre - it really starts to open up what you can do in your business. We want to see a more connected rural New Zealand because that is good for all of New Zealand,” says Smith.



Aimer founder Jeremy Bryant



Smart tech for farmers’ digital toolboxes

A more connected rural New Zealand is helping farmers pick up on some smart tech for their digital toolboxes.

As software has developed and connectivity at a farm level has improved, farmers and growers are also increasingly able to tailor the chosen digital tools to their farm’s specific profile, rather than put up with a cookie-cutter version that never quite fits with what their farm is.

This next generation of tech is rapidly advancing farmers’ and growers’ ability to save themselves significant time, freeing up management to focus more on strategic direction than tactical day-to-day decision-making, and helping ensure daily operational decisions are streamlined and standardised.

Onside

A national biosecurity emergency is not always the most promising event to push a new tech business’s growth forward. But it was the *Mycoplasma bovis* (M. bovis) livestock disease that helped take tech company Onside to a new level of growth.

The Onside smartphone app was initially developed to help farmers meet their health and safety obligations on farm by keeping better records of who was on their property, and ensuring they were aware of the hazards peculiar to that property. Checking in and out of the farm has been made a simple, phone-based affair that happens in real time.

The app was developed by founder and CEO Ryan Higgs who grew up on a Waikato farm and spent time studying at prestigious Cornell University in

New York. That was followed by eight years working with leading agri-business professionals and tech people, where he gained deep insights into animal science and mathematical modelling.

An idea and partnership with one of Synlait’s founders Juliet Maclean and businessman and investment banker Falconer saw Onside born.

While Onside provides those visiting a farm property with a check-in process, including a farm map that identifies that farm’s particular health and safety risks, such as steep areas around raceways or dangerous obstacles, it was the tracking, messaging and notifications provided to keep staff up to date that provided the opportunity to expand the user base of the app.

During the outbreak of M. bovis, Onside proved its value as a data capture and movement tracker capable of contributing to MPI’s eradication efforts, a world first to be carried out in combating the disease.

Being granted a Sustainable Food and Fibre Fund of \$4 million last June and including \$6 million of its own funding means the tracking app has advanced since, to play a critical part in disease transmission prediction and tracing throughout the entire primary sector.

“It is no longer just about cattle. The kiwifruit sector having experienced its own epidemic with PSA has also implemented Onside for tracking movement and spread of risk, and we are also working with a number of other sectors, including viticulture.”

Meanwhile, the value of Onside in an increasingly interconnected farm environment is growing.

“More and more farmers are required to collect information, and we are supporting farmers in collecting some of that information, often saving them a big headache in the process.”

Onside’s data collection and tracking ability means it plays a valued role alongside the national NAIT livestock registry when it comes to understanding movements on and off farms.

With greater connectivity within farms and orchards, Onside’s potential is also being recognised for helping with tasks like tracking kiwifruit bins, partly as another biosecurity aspect, but also helping save packers money on bins which can become elusive.

“The biosecurity angle was not something we had originally envisioned but if you look at the cost of a biosecurity outbreak, there is often no change out of \$1.0 billion, so preventing one through better information is a good investment,” says Higgs.

Aimer

A Hamilton farm software company is using AI to turn its software into a virtual farm advisor for dairy farmers.

Aimer is the brainchild of data guru Jeremy Bryant who has a long association with data, dairy cows, and pasture, including six years as manager of New Zealand Animal Evaluation Limited (NZAE), the industry good organisation for animal evaluation and genetics that is tasked with ensuring the New Zealand dairy herd is internationally competitive and resilient.

At a time when farmers are being urged to focus on maximising grass as their lowest-cost feed input, Aimer

has been developed with pastoral efficiency at its core.

The software’s technology enables farmers to assess dairy farm pasture cover quickly and accurately, without the arduous, time-consuming task of having to walk every paddock with a plate meter.

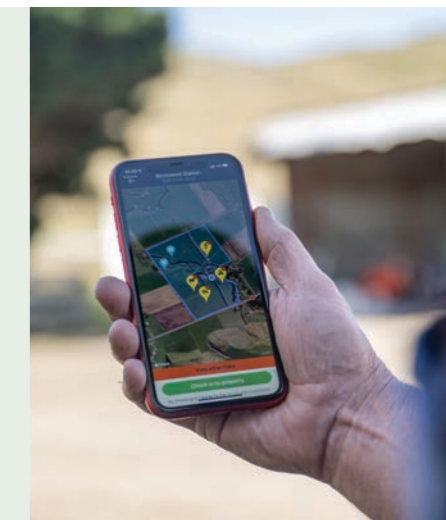
Farmers do a whole-of-farm walk over winter, entering dry matter data into Aimer, then from spring onwards, only need to complete a partial or sample paddock farm walk, cutting a three-to-four-hour job down to around 30 minutes to an hour.

Meanwhile, the software’s AI has “learnt” the farm’s pasture growth profile, generating an estimate of the farm’s feed wedge and makes recommendations on the best actions to take depending on the wedge’s adequacy.

“It could be that it recommends you conserve some feed now for silage, or perhaps you need to consider applying some nitrogen, or bring in more supplement to make up a deficit,” says Bryant.

Aimer also auto-generates paddock break and supplement feeding plans in seconds for each mob on the farm after farmers have measured pasture covers on part or all of the farm. Good connectivity on farm means the decisions can be made on the run at a busy time of the year when there are never enough hours in the day, and saving downtime by doing away with any need to return to the farm office.

Setting up the breaks is often a job for junior staff members, and knowing they can look up the size required on Aimer can provide peace of mind for



busy farm managers that mobs are getting what they need.

A feature eagerly awaited and due for release this spring is Aimer’s ability to measure pasture levels through a smartphone scan of the paddock. By standing in the paddock and making a single 360-degree turn with the smartphone camera on will have Aimer deliver an estimate of the paddock’s dry matter content.

The ability to build up a historical understanding of the farm’s pasture growth ability paddock by paddock is also enhanced by being able to enter cultivar and crop types, to help know which ones overperform or underperform over time.

Just as dairying is all about good grass management, it is also about good people management.

Bryant says farmers appreciate how Aimer can be used as a coaching tool to help young staff calibrate grass levels, something that in the past has proven difficult to communicate.

