Comments on RTIRC review

CONNECTED FARMS

Who are Connected Farms?

We focus only on the Agricultural Sector

Leadership team have farming backgrounds

We have strong experience in Rural Communications

We enable digital agriculture (the adoption of AgTech)

Properly designed solutions for individual farms or major corporate farming portfolios

Farm Connectivity improves safety, community connection and mental health

Connected Farms solutions

Connected Farms are an Australian licenced telecommunications carrier and recipient of government regional communication funding. We deliver customised connectivity solutions to farms across rural/remote Australia

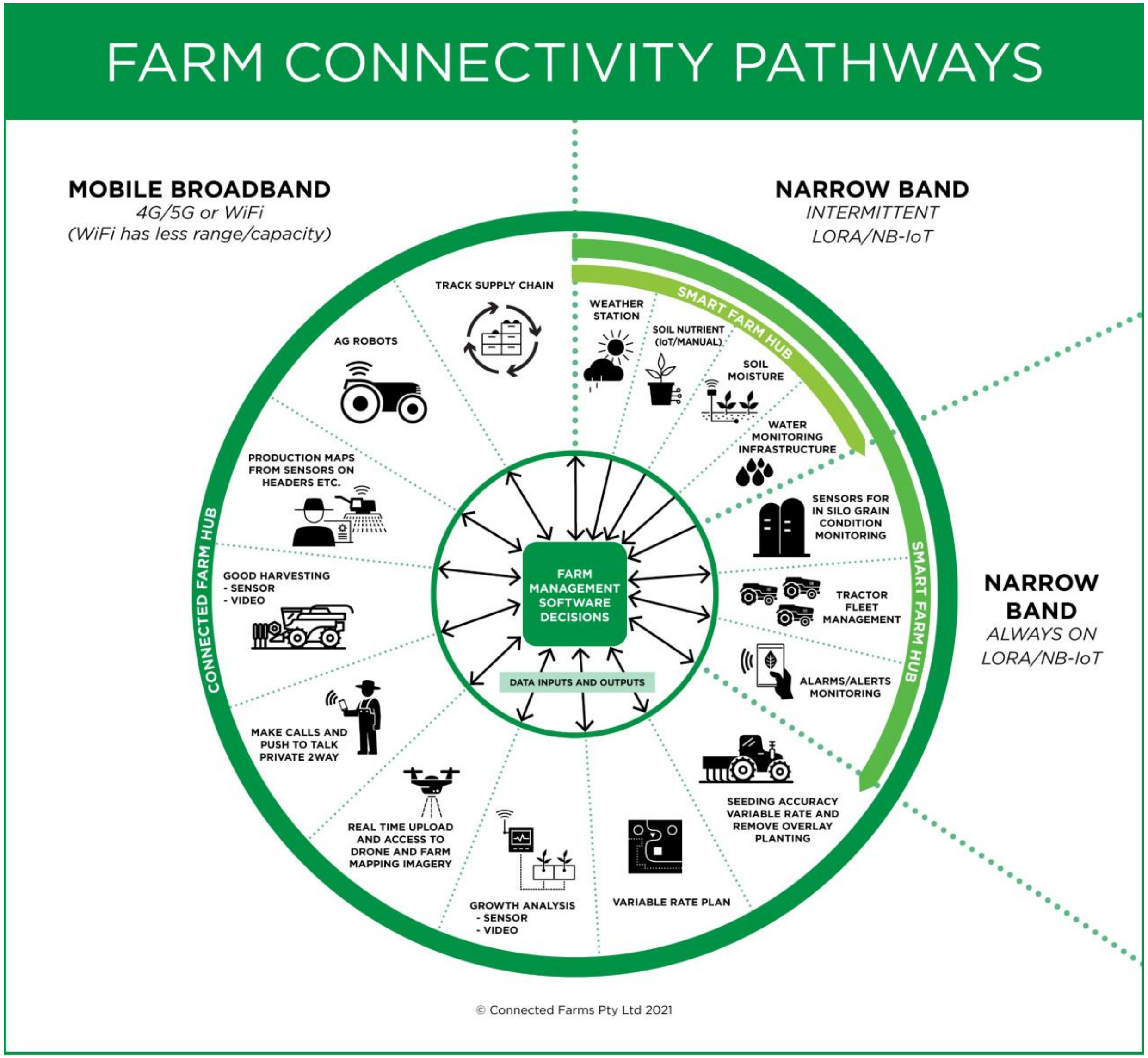
We work with regional partners to access telco infrastructure (such as towers) and build new Connected Farms tower assets, rural fibre networks and regional (edge) datacentres. We are technology vendor agnostic.

Specialise in technology designed for 'place-based' geographic coverage and farm applications. Enabling connectivity across farm produce lifecycle (see slide below)

Our connectivity solutions include - Over the farm PrivateLTE (voice and data), currently trialing private mobile network, Over the Farm WiFi (voice and data), fixed wireless internet, satellite connected 'on the move' hotspots, over Farm IoT coverage, satellite business internet, edge data centres.

Rapid deployment of interim communications solutions allowing customers to be connected quickly while their permanent over the farm network is provisioned.

Connected agtech minimises inputs and maximises outputs



Connectivity themes- RTIRC response

1) Connectivity and unmet demand in rural/remote and farms – need for scalable, customised and fit for purpose solutions
2) Awareness and education – critical need for digital/connectivity literacy and advice
3) Investment and regional telecommunications infrastructure – cost implications, role of innovation and emerging technologies
4) Different business models and commercial incentives employed by specialist regional telcos
5) Future design of government funding and investment - community led initiatives and place-based connectivity solutions

1). Connectivity and unmet demand

- Explosion in AgTech and smart devices resulting in significant unmet demand for connectivity. Missing layer across large corporate farms, to small privately owned agribusiness is always connectivity.
- Customised scalable connectivity solutions are critical – IoT and smart device capability requires different connectivity solutions to AgTech automated machinery connecting to a network to send/receive data (e.g. variable rate applications). These require higher data rates, lower latency and broadband network solution
- AgTech divide being created between farms that can access on farm connectivity and associated improved efficiency/productivity and those that have no connectivity, therefore unable to adopt AgTech activities
- Backhaul and edge computing also critical elements of AgTech connectivity and uplift requirements. Mix of technology solutions required

2). Connectivity awareness and education

- Connectivity and digital literacy critical factor in rural and farming communities. Significant literacy uplift and advice required in relation to connectivity options and on farm coverage needs
- Gap between expectation and outcome of services is significant, products are purchased that are incorrectly marketed, are not 'fit for purpose' and do not meet coverage needs or agribusiness requirements. Customers find joining the 'connectivity dots' to access a connectivity solution prohibitive
- Connectivity advocacy is important to encourage engagement with digital infrastructure, this must be vendor agnostic, user/customer centred in its design and focus, delivered to communities by independent actors/agents with knowledge of regional communications requirements
- Engagement strategies and channels must be fit for purpose and needs based – social/website/apps are difficult to access with poor or no connectivity
- Need to make better use of local or specialist channels to provide solutions focused connectivity information, involve farmers early in process.

3). Investment in regional/remote communications

- Access to cost effective and appropriate lower band spectrum (sub 1GHz) is critical to smaller and specialist telcos delivering services and creates significant barriers to entry
- Infrastructure cost of servicing rural/remote areas with privateLTE (4G/5G) is approx. 4 times higher compared to metro/regional areas – mostly due to the need to build more towers as available higher spectrum has poor area coverage and penetration characteristics (the signal reach is limited compared to low band spectrum). In urban areas, privateLTE is most often constrained to campus with a small footprint, but in regional areas it is required for use in large farms or mines.
- Compared to urban areas, rural areas don't have a vast range of rooftops (except some grain silos) where wireless / telco sites can be located. This means more new tower builds are required, adding to the roll-out costs
- Incumbent spectrum holders are reluctant to share unused lower band spectrum on a commercial basis with access seeking smaller telcos. Access to this spectrum could change cost structure and profile for servicing rural/remote areas
- Regulator could be empowered to make better use of other spectrum authorisation/licensing tools such as adopt area wide or apparatus licensing in lower band spectrum to allow broader access to a range of smaller regional telcos.

4). Encourage different business models and commercial incentives

- Government place-based funding has a key role in connectivity and coverage (mobile blackspots, RCP) but it should **not** be the only pathway for servicing rural/remote communities and farming areas
- Smaller and specialist regional telco carriers have business models that have identified commercial market opportunities in rural/remote areas and are actively servicing these areas on a commercial basis – without government funding contributions
- Business models of regional telcos are different to national providers. Smaller regional telcos have placed based business models rather than density driven models. This creates agility in the ability to commericalise innovative technologies quickly and customize a range of connectivity solutions
- Recent Federal Government place-based funding (regional connectivity program) primarily targeted large telcos (***only 25 of 132 RCP grants, or 18%, went to non-Telstra, nbn or FSG related projects***). This reinforces a well understood position in rural/remote areas that telcos won't service these areas unless funded by govt to do so. This blunt funding approach misses many opportunities to support innovative and tailored connectivity solutions.

5). Future design of government funding and investment

Connectivity policy settings and objectives for future government funding need to consider :

- User centred design – involve farmers and communities in the place-based solution design and recognise that demand profile and connectivity requirements vary greatly across different farms and regions
- Better coordination of program objectives and outcomes at local/state/federal level
- Recognise that funding the extension of national carrier networks into regional/remote areas is only part of the solution and, in parallel, encourage a wider range of connectivity solutions offered by smaller providers that are more place-based in their business model.
- Address barriers to market entry (e.g. innovations in spectrum access solutions, backhaul challenges) for regional telcos to deliver local connectivity initiatives
- Better align investment and funding with priorities of rural/remote communities
- Better support small specialist telco innovation in rural/remote areas to deliver place-based tailored and lower cost connectivity solutions

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