NINTI ONE : INNOVATION FOR REMOTE AUSTRALIA

Ninti One Limited

Submission – Inquiry into agricultural innovation

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Ninti One Limited

ABN: 28 106 610 833

PO Box 3971, Alice Springs, NT, 0871

Ninti One Limited Contact:

Rod Reeve, Managing Director: 0411 481 974; rod.reeve@nintione.com.au

Introduction

Ninti One welcomes the opportunity to provide input into the inquiry into agricultural innovation. Our experience in developing innovative tools to increase productivity in the pastoral industry has informed our response to the terms of reference provided by the Committee.

About Ninti One

Established in 2003, Ninti One is a not-for-profit, independent national company that builds opportunities for people in remote Australia through research, innovation and community development. Ninti One manages the Cooperative Research Centre for Remote Economic Participation (CRC-REP) and is focused on delivering solutions to the economic challenges that affect remote Australia. Through our research, we provide practical responses to the complex issues that can restrict full economic participation. We are a partnership organisation of more than fifty stakeholders mostly located in remote Australia, including the Australian Government, state and territory governments, small-to-medium enterprises, universities and other research providers, industries including mining, pastoralism and tourism.

Our activities relevant to this inquiry include our partnership with Precisions Pastoral Pty. Ltd. on the development and commercialisation of the Remote Livestock Management System (RLMS); current CRC-REP Precision Pastoral Management Tools research project and our work with the Broadband for the Bush Alliance.

More information on our activities can be found at www.nintione.com.au and www.crc-rep.com.

Terms of reference

1. **Improvements in the efficiency of agricultural practices due to new technology, and the scope for further improvements.**

Over the past decade, Ninti One has been involved in researching and developing technology for the pastoral industry. This includes remote water point monitoring via telemetry, remote walk over weighing and auto-drafting and software that can remotely monitor both pasture and cattle performance.

The WaterSmart Pastoral Production™ project managed by Ninti One was to evaluate the use of new and novel commercially available water management technologies. These included technologies relating to water storage, remote telemetry, pumping, pipes and delivery systems. Our research showed that monitoring water points on cattle stations via telemetry could dramatically reduce costs, by $25,000 - $73,000 for most stations (Ashley et al 2008).

Research by Ninti One and a commercial partner Precision Pastoral Pty. Ltd. has produced the Remote Livestock Management System (RLMS). The RLMS is a combination of hardware and software capable of remotely identifying, weighing, and drafting individual animals within a cattle herd without labour inputs. It introduces to graziers and pastoralists the same sort of precision available to dairy and beef farmers on much smaller properties – enabling them to muster, weigh, monitor, draft and hold pastoral cattle for market over large distances. The RLMS has the capacity to

increase beef enterprise production while reducing operating costs. Indeed, an independent report found that the Ninti One developed technology of remote walk over weighing and auto-drafting of cattle could lift cattle production on average by 2.5% and reduce mustering costs by 7.5 – 11.3% (Swain et al 2013).

The CRC-REP Precision Pastoral Management Tools project is currently developing software that can remotely monitor the performance of pasture and cattle on a station, requiring no labour. This technology will for the first time in the pastoral industry deliver timely and objective data to enable the station manager to make finely tuned management decisions that will increase their production, reduce their costs and deliver an improved profit margin for their business. These decisions relate to time of sale of cattle, stocking rates, timing of mineral supplementation and natural resource management. Experience to date in conducting this research on commercial cattle station has found that as a beef producer becomes more familiar and confident in the technology and data provided the more applications they can see for it. As such, there is further scope for continuing to improve these technologies to allow for greater application and improved profitability and long term viability of pastoral properties in Australia.

2. **Emerging technology relevant to the agricultural sector, in areas including but not limited to telecommunications, remote monitoring and drones, plant genomics, and agricultural chemicals.**

Ninti One has two emerging technologies in different stages of development: the Remote Livestock Management System (RLMS) commercialised by Precision Pastoral Pty Ltd and Precision Pastoral Management Tools (PPMT) still in development.

The RLMS technology is able to remotely weigh and automatically draft cattle within a cattle station's paddock (see image 1).

Image 1 – Brahman bulls using the Precision Pastoral Pty Ltd Remote Livestock Management System at Newcastle Waters station, Barkly Tablelands, NT.

The CRC-REP Precision Pastoral Management Tools Project is developing software that can automatically monitor, analyse and report back on the pasture and cattle performance to the beef producer. This decision-making tool should not only improve profitability of the beef sector in northern Australia, but should also assist sustainable land management and sector resilience. Ninti

One intends to commercialise this software once the research and development phase is completed. Further information about this project can be found on the project's website: http://crc-rep.com/research/enterprise-development/precision-pastoral-management-tools

3. Barriers to the adoption of emerging technology.

Developing a product to commercialisation stage requires a significant amount of investment to explore and overcome developmental hurdles as they occur. Finding the right investor can be difficult as it is a niche market and producers are slow adopters of new technologies. Our experience with end-users (mostly beef producers) is that any new technology must follow the three Rs: it must be Robust to survive the harsh environment, Reliable in its delivery of the data and provide a Return on investment for the purchaser.

A major barrier to adoption of remote monitoring technologies such as the RLMS and PPMT is the need for access to fast, reliable and affordable broadband services. Currently, Australian farmers like other residents of rural and remote Australia experience significant telecommunication infrastructure and affordability issues. In many cases, Australian farm businesses are currently operating with broadband connections that are slower and more costly than those available in other nations that compete for similar agricultural export market opportunities, such as Denmark, the US and Canada (Tomlinson 2015). For many farmers, lack of mobile coverage is also impending on running efficiently their business. Most Australian farming and pastoral properties are in areas which are likely to depend on the NBN's Long Term Satellite Solution (LTSS). LTSS will ultimately provide an upgraded service but questions remain regarding its ability to meet long term community access needs, especially as reliance on broadband services for day-to-day communication and social participation increases. Satellite broadband services will also involve monthly download limits which may increase the costs for internet subscriptions substantially.

Ninti One is a member of the Broadband for the Bush Alliance, which is a group of organisations that are committed to the digital inclusion of remote and rural Australia. The Alliance aims to ensure that remote and rural Australia does not become further disadvantaged in the area of communications. The Alliance recently organised a Forum in Darwin in July 2015 and made a set of recommendations regarding broadband policy for rural and remote Australia. This includes a call for the development of a coordinated Remote Australian Digital Strategy that incorporates discussion of acceptable service levels and the need for greater training and education. Such Strategy would benefit the Agriculture industry and enhance productivity and profitability. More information about the Alliance: http://broadbandforthebush.com.au/ and Forum's recommendations: http://broadbandforthebush.com.au/wp-content/uploads/2015/08/BroadbandForTheBush_Forum2015_Communique.pdf

Contact

Should the Committee require further information or would like to discuss the points raised above, please do not hesitate to contact Rod Reeve, Managing Director, Mob: 0411 481 974, rod.reeve@nintione.com.au

References

Ashley MRC, Bubb AJ, James AR, James C and James CH (2008) 21st Century Pastoralism – Remote management innovations for sustainability in arid rangeland pastoral production. In: Multifunctional grasslands in a changing world. Edited by organising committee of IGC.IRC Congress. Guangzhou. Guangdong People's Publishing House, China.

Swain D, Gregg D, Bishop-Hurley G, Trotter M and Petty S (2013), On property benefits of Precision Livestock Management, Meat and Livestock Australia, North Sydney, Australia.

Tomlinson, A (2015), Australian farmers could remain years behind global peers due to NBN delays, Australian Farming Institute.
http://www.farminstitute.org.au/newsletter/2015/May/May_2015_featurearticle.html