

**Monday 23 March 2015**

## **Will 'Big Data' be the killer of family farming, or the key to its renaissance?**

'Big Data' is rapidly emerging as the next major technology development that has the potential to result in big productivity gains for farmers, but the key question is whether the technology will create new opportunities for family farms, or whether it will simply accelerate the consolidation of farming into bigger, corporatised operations.

'Big Data' refers to the rapid emergence of the capacity to generate, store and analyse large volumes of data derived from a range of different low-cost measuring and recording devices, and to use this information in computerised decision support systems to take some of the guess-work out of farm decision-making. The devices from which data can now be captured range from individual animal sensors, to soil, water and temperature monitors, imagery from drones, data from automatic stock weighing scales, data from sensors on tractors, seeders and harvesters, genomic and performance data for livestock, and even data derived from regular satellite imagery.

The capacity to record, integrate and analyse all this data, and then to utilise the results as part of farm management decision-making, creates the undoubted potential to take farm productivity to new levels by enabling management at the individual animal or square metre scale, rather than at the herd or paddock scale.

Big data undoubtedly has the potential to have a revolutionary impact on agriculture.

'We are already seeing some of these gains being realised in the use of genomics and index-selection in livestock breeding which is resulting in much faster rates of genetic gain than more traditional selection methods. We are also seeing productivity gains in cropping, as variable-rate seeders and sprayers enable more efficient use of inputs, and harvester yield maps enable the development of optimal crop management strategies' said Mick Keogh, Executive Director of the Australian Farm Institute.

'However, there is also a flip-side to this development. In the case of big data the potential negative risks include lack of privacy of data, lack of standardisation limiting farmers' ability to integrate information from different sources, a potential for a loss of basic skills as automation progressively takes over, and increased franchising as farmers become locked in to participation in specific production systems as a consequence of their technology choices' said Mick Keogh.

'Some are also concerned that there is a risk that the technology will only be affordable to large and corporate farms, and that smaller farms will be unable to stay competitive. On the other hand, there is also the potential that these technologies will boost the ability of smaller farms to catch-up to the productivity gains made by larger farms, by improving management decision-making on these smaller farms.'

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## **Will 'Big Data' be the killer of family farming, or the key to its renaissance? (continued)**

This Autumn 2015 edition of the *Farm Policy Journal*, 'From little data big data grow', contains papers contributed by a range of Australian and international industry experts, which discuss the implications of 'big data' for Australian farmers. These include:

- Big data: from hype to agricultural tool, by Professor Steve Sonka, University of Illinois
- A European perspective on the economics of big data, by Krijn Poppe et al., LEI Wageningen, the Netherlands
- Sheep industry productivity - the role of genomics and digital data, by James Rowe and Rob Banks, University of New England
- Challenges and opportunities for precision dairy farming in New Zealand, by Callum Eastwood, DairyNZ and Ian Yule, Massey University, New Zealand
- Agricultural big data: utilisation to discover the unknown and instigate practice change, by John McLean Bennett, University of Southern Queensland

The Autumn 2015 quarter *Farm Policy Journal* is available online at the Australian Farm Institute website [www.farminstitute.org.au](http://www.farminstitute.org.au) or by phoning (02) 9690 1388.

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