

# 10 points ...

## on agritech

This KWM BriefSheet sets out 10 points on agritech and the way it can transform the food and agribusiness sector.

- **Agritech is not a novel concept ...** “Agritech” (or “agtech”) is the application of technology to agriculture. Tractors, irrigation, fertiliser, selective crop breeding and GM are all technological advances that have been used in agriculture for decades and, in some cases, centuries.
- **... but recent technological advances will radically change the food and agribusiness landscape ...** The rise of precision farming harnessing satellite technology and the explosion of digital and internet technology, including drone technology, robotics, variable rate application technology, online market places, sensors, software and the “Internet of Things” (all “Digital Agriculture”), is what distinguishes this new agritech era.
- **... in robotics and artificial intelligence (AI) ...** After many false starts, the Economist has predicted that AI has “taken off”, aided by speedier computation and “deep learning”, a technique that enables systems to improve by processing examples rather than being explicitly programmed. In this area, Queensland fledgling **Swarm Farms** has developed lightweight robots that can identify individual weeds in a field before plucking them out or killing them with microwaves and lasers. The robots are capable of everything from refuelling themselves to diverting course to assist a peer toiling in a particularly weedy area.
- **... and the Internet of (agricultural) Things ...** Recent ventures have also looked to adapting IoT to agricultural purposes. IBM suggests that this opportunity is ripe for the picking, with only 1% of agriculture’s capital expenditure currently going towards technology. Tasmanian start-up, **The Yield**, combines networked wireless sensors and local data to connect oyster farms to the IoT, reducing unnecessary estuary closures and allowing for more efficient labour coordination and easier food safety tracking.
- **... along with continued developments in data collection and telecommunications.** Increased connectivity and access to data will not only increase efficiency, but help inform decision-making. **OVASS**, from Western Australia, has developed software that collects data using sensors and then analyses and structures the data to give farmers actionable tasks.
- **This is exactly what is needed in the face of the anticipated “megatrends” ...** Overall food demand is forecasted to increase by about 70% between 2005/07 and 2050. Along with “a hungrier world”, CSIRO and RIRDC are also predicting: “a wealthier world” (with a new middle class), “choosier customers” (with access to information empowering consumers to demand ethical, sustainability and health attributes), “transformative technology” and a “bumpier ride” (caused by globalisation and a shifting climate).
- **... and to combat the unique challenges faced by the agriculture sector.** This sector is particularly vulnerable to the uncertainties of changing environmental conditions and weather patterns. For individual farmers, bad weather can wipe out an entire field trial. Supporting and investing in agritech are critical to improving efficiency, productivity and sustainability in the sector both within and beyond the farm gate.
- **Key to the success of agritech will be getting farmers and the community on board ...** Failure to engage with the broader community will be the biggest barrier. Developers should focus on asking questions and applying design thinking to find the value proposition for farmers and to ensure it will have high societal and environmental impact. Ultimately, farmers want actionable information, rather than reams of data.
- **... getting the right support ...** The Government and academic community, through CSIRO, FIAL and RDCs, and the private sector, through start-up accelerators and impact investment funds, have exhibited growing interest in fostering development in this area, devoting research time, investment and expertise to the industry.
- **... and getting your ducks in a row.** The legal issues associated with collection, ownership and management of data are complex. Contracts between data collectors, agritech service providers and farmers need to specify permitted uses and restrictions on the data, and comply with privacy laws. Developers need to actively protect their innovations through the use of trade marks, confidentiality protection, copyright and patents, to maintain their competitive edge and attract investment to scale up and turn prototypes into commercial products.

## We are here to help you



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