Automatic Milking System: Technology in the dairy industry

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What we have done

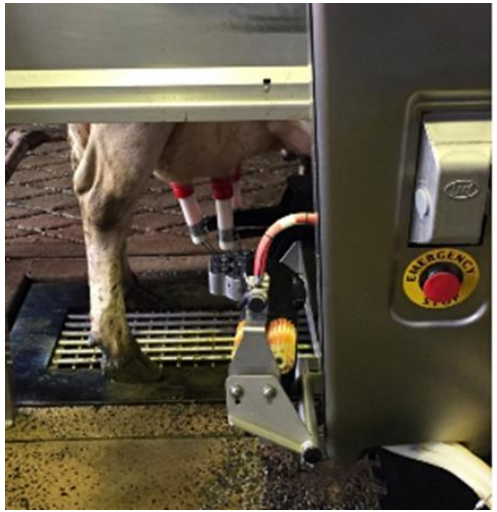
- Originally milked 300 cows in a 20 swing over dairy on 500 acres
- 1.5 to 2 labour units spent 8 to 9 hours a day milking
- July 2012 installed 6 Lely A4 Robots
- Built a feedpad

Reasons

- Staff were over milking, early mornings and late evenings
- Looking at a way of retaining good staff
- Spend less time milking cows and more time to focus on home grown feed.
- Create a better lifestyle for ourselves, staff and families.
- Improve herd management

Changes on our farm after AMS

- We reduced our labour by half a labour unit.
- Went to milking 400 cows and farming 1500 acres
- One labour unit spends between 3 to 4 hours a day around the milking shed
- Tasks included
  - – Hosing out dairy
  - - Treatment and AI cows
  - - Calves and getting cows and calves in
  - - Daily robot cleaning and maintenance
- All staff work within the hours of 8 am and 4:30pm



WHAT WE HAVE LEARNT AND BEEN CHALLENGED BY

- Cows took 48 hrs to adapt to milking in the robots and 2 months to move around the farm in a voluntary manner
- It took us about 2 years to change and adapt to robotic milking
- Robotics were still relatively young in Australia and we were the 1st in the area
- We developed a great and close relationship with Lely Australia and Local Dealer – Truck and Tractor.
- Worked together to adapt ourselves and the way of farming

LEARNING EXPERIENCES

- The amount of data available in these systems, and how to use it and manage it to our advantage
- Getting the right balance for the amount of service and maintenance that we as farmers are required to do
- Working with the technology – sensors, etc.
- Managing seasonal conditions and voluntary cow flow which have a big impact on managing nutrition, costs and production during –
  - Periods of full grazing
  - Periods of total mixed ration
  - Periods of partial mixed ration and partial grazing

CHALLENGES

- It has not been a smooth road by any means over the last 7 years.

- We have also endured over the time, like everyone else; all the challenges of the Australian climate and dairy industry which has resulted in the industry being in the situation it is today

Over the past 7 years we have seen and noticed a large amount of development in Robotics and AMS

- The technology has become far more reliable
- Over the last 12 to 18 months we are starting to see the costs of repairs and maintenance reduce as –
  - technology is advancing
  - becoming more widely used on a global scale

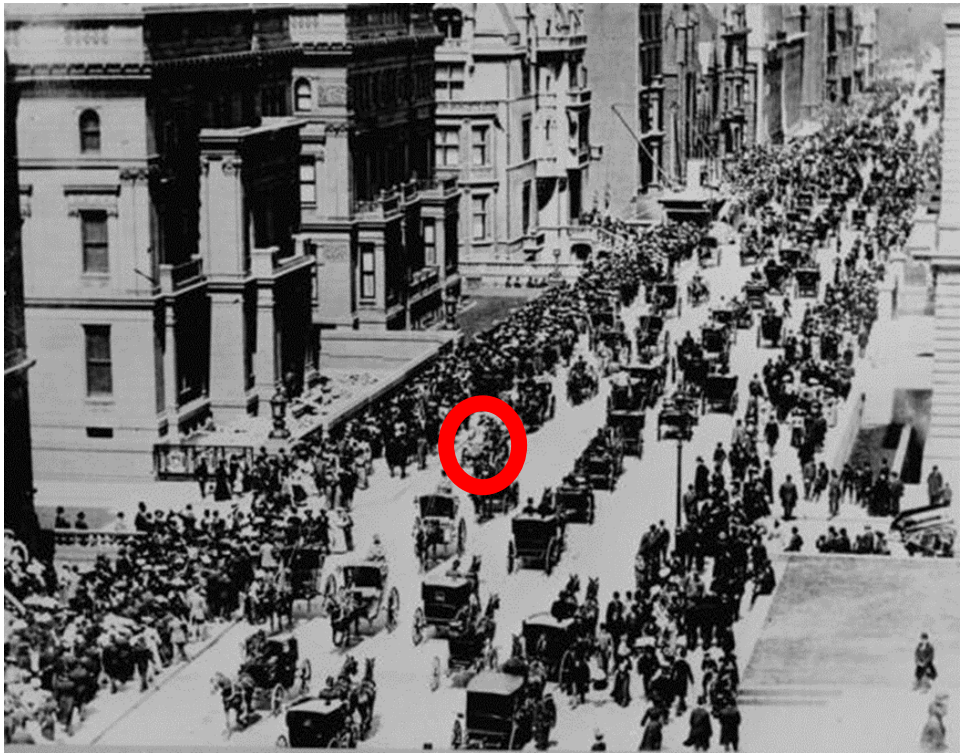
The transition from Conventional farming to Robotics has become a lot smoother process as Tech and service providers have developed in that time while working with new and existing clients about what works best and how it should be implemented.

TECHNOLOGY IN THE FUTURE FOR THE AUSTRALIAN DAIRY INDUSTRY

Technology is going to become an even greater part of the agriculture industry within the next ten years in areas such as

- Milking
- Irrigation and water
- Effluent
- Animal Data and Measurement
- Pasture and crops Management
- Feed and Nutrition
- Genetics
- Autonomous Vehicles

Uptake of technology – New York - 1900



Uptake of technology – New York - 1913

Easter morning 1913: 5th Ave, New York City.
Spot the horse.

Source: George Grantham Bain Collection.

PROGRESS OF TECHNOLOGY

1985 → 1st cell phone was made

Analysts predicted:

→ that by the year 2000 -900,000 Americans would own a cell phone

→ BUT in the year 2000, 109 million Americans owned a cell phone

2007 Steve Ballmer (CEO of Microsoft) “There is no chance the iPhone will get any significant market share. No chance.”

Big advancements and break throughs in technology happen when –

1. Development of a technology reaches a certain point

2. A business has the ability to make that technology cost viable.

For example:

- Smart Phones– when the technology and cost of touch screens and Lithium batteries converged to become viable, businesses came together and the smart phone was developed
- Cost of computers – same abilities

TIME	VALUE
Present	$600
20 years ago	$ 600 000
40 years ago	$ 600 million
60 years ago	$ 600 billion

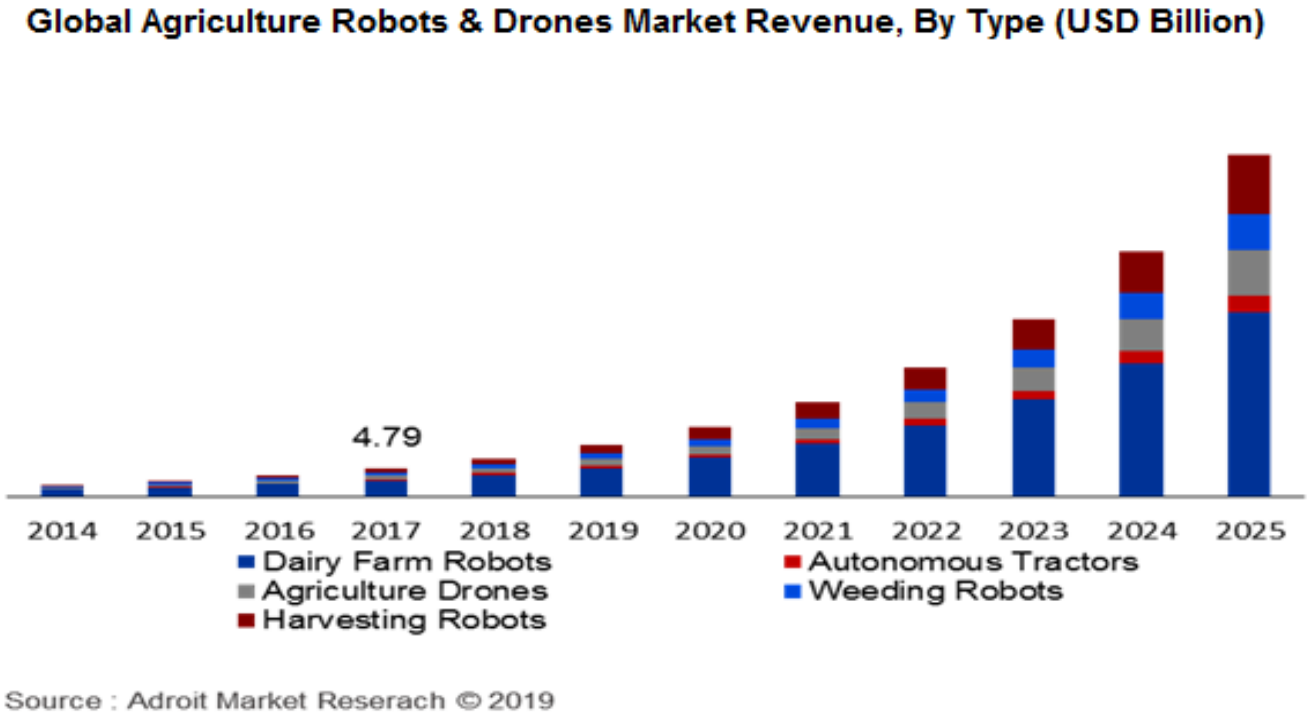
Autonomous Vehicles –
LIDAR Sensors – Laser / Radar

2012 Analysts said – “No way, they will not be up and running until 2050”

YEAR	SENSOR VALUE
2012	$70 000
2013	$10 000
2014	$1 000
2017	$ 250
2019	$ 90 (and size of a postage stamp)

Let’s apply this to agriculture now

This graph shows the history and Forecast for the uptake and Revenue of some Agricultural technologies



One reason why technology is so important to our industry

Reasons for slow uptake of technology in Australian dairy industry

Dairy industry + Finances:

- Low farmer return
- Government incentives/subsidies

Attitude and culture towards change

THANK-YOU