

**Ag Institute Australia**

**“2040 – a quantum leap from 1990”**

**Ian Davies – GM Agriculture**

May 2015



  
**wilmar**

# Wilmar International Ltd – in context

## NON SUGAR

- Large oil palm grower and processor, flour milling and processing, grain trading, oleo chemical production, compound fertiliser etc

## INTERNATIONALLY (SUGAR)

- Links to sugar mills and refineries in:-
  - Myanmar, Brazil, Morocco, Indonesia, India
- One of the largest sugar traders in the world.



## AUSTRALIA

- Purchased Sucrogen (CSR Sugar) in 2010
- 8 sugar mills – milling 15.5m tonnes cane off 170,000 ha
- 2 sugar refineries (JV with Mackay Sugar)
- 1 ethanol plant
- Farms – owns 8,500 ha – farm 6,500ha (balanced leased to growers) – “**Wilmar Corporate farms**”



# What's different about Corporate farms



- It's run as a “pure” and “clinical” business.
  - Everything has to be justified.
  - Budgets, reforecasts and periodic variance analysis.
- Given our size, we are easy targets for all sorts of “easer riders”, therefore systems orientated to improve governance
- Large scale – reasonably high tech – low labour
- Slow to move – I cannot just “nip” into town to see the bank manager to buy a new tractor – I have to plan and get it into a CAPEX budget 12 months prior.
- Relies on technology to understand elements, as limited “personal factor”

# Predicting the future – it's not that easy!!

- I read somewhere that:

*“80% of what our kids take for granted today was not even thought of when we were their age”*

- QUESTION - Can I then look back 25 years to 1990 to understand the quantum of improvement and apply that going forward?
- What was 1990 like :-

- Mobile phone was just a phone (or a brick!)
- Home PC was very rare and very expensive
- The “www” (as we know it) was just a year old
- No email, Facebook, Twitter or any social media
- GPS / GIS around but expensive and not common
- Tractor tech - reasonably low – radar speed sensing!!!

**... so it's a bit difficult to imagine what might be ahead!**



## What was my focus then?

- For sugar - no commodity futures pricing – therefore no hedging – nothing I could do about sugar price
- Focus was on costs - but electricity and water seemed affordable?
- Farming decisions were based on past practices – “what we did last year”
- Farm was farmed as a “homogenous” unit – 150 units N / ha all over!
- Environmental awareness was low. Safety – rural exempt.

**... looking back they were the “good old” days where a family could make a living off 100ha farm.**





# What about today – what focus do I have?



- Sugar price – now have the ability to future price and hedge.
- Labour cost – expectation of inflation each year
- Chemicals and fertiliser - cost is high and the right to use is being challenged
- Electricity and water - cost is high with increasing RWUE focus
- Market access – driven by Free Trade Agreements, health perceptions, requirements for Sustainability and compliance around BMP, Bonsucro etc
- Workplace health, safety and environment – there is increasing social and legal responsibility with compliance being costly and time consuming

# # 1 Question - Corporate farming in 2040?

This a little outside the scope of this talk – but something that needs to be considered.



- Will there be corporate farming?
- Who will own our corporate farms?
  - Can / will Australian companies lead the charge?
  - Foreign investment – what are the incentives now?
- What will happen to the small farmer as he gets older? Will the neighbour be able to buy them out – or even want to?
- Will corporate farming increase to balance off the loss of the family farm to other enterprises? (if so it will be limited to land that can support corporate farming – driven by ROFE).

# What will be worrying me in 2040

Me personally? – probably nothing!!

But .....I predict....

- Gross margins will be tighter
  - Strong focus on “bottom line”
  - “Crop productivity” will be **KING**
- Scale will be important – to “wash off” overhead costs
- Cost control will be essential
  - Material inputs - likely to have regulated use
  - Labour will be expensive - what was a \$25/hr wage in 2015 will be \$45/ hr in 2040 (2.5% inflation)
  - Energy (diesel and electricity) – likely to be very costly
  - Equipment “may” be expensive – but focus on “uptime”
- Likely to have a higher WHS&E focus - traceability of my product from “paddock to plate”
- **So ... same stuff, just more intensive and greater detail.**





# ... so what will have really changed?

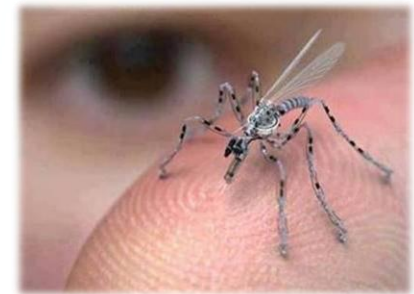
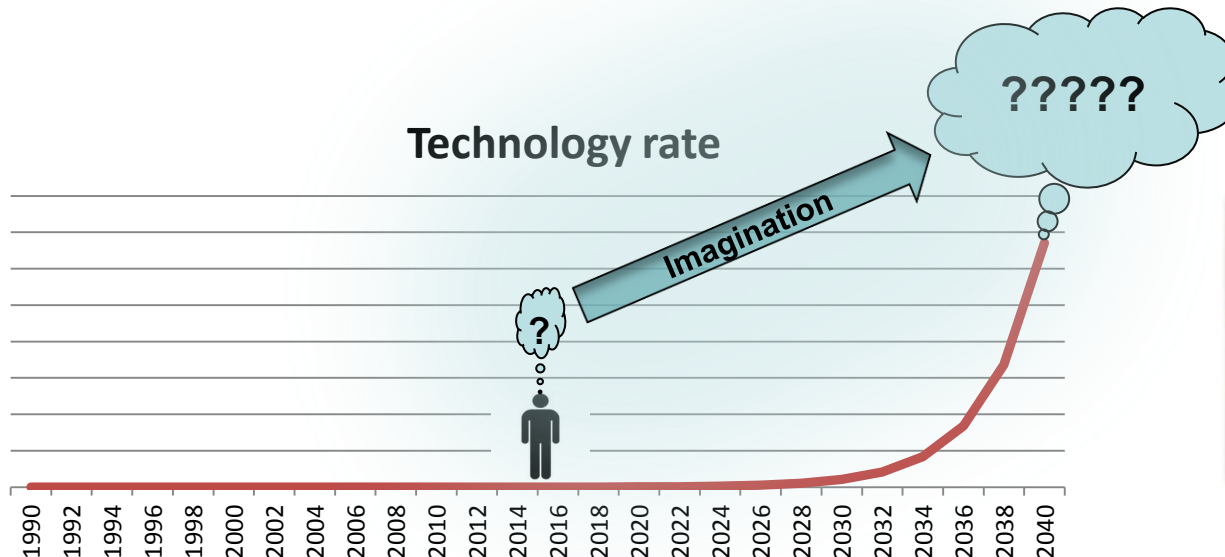
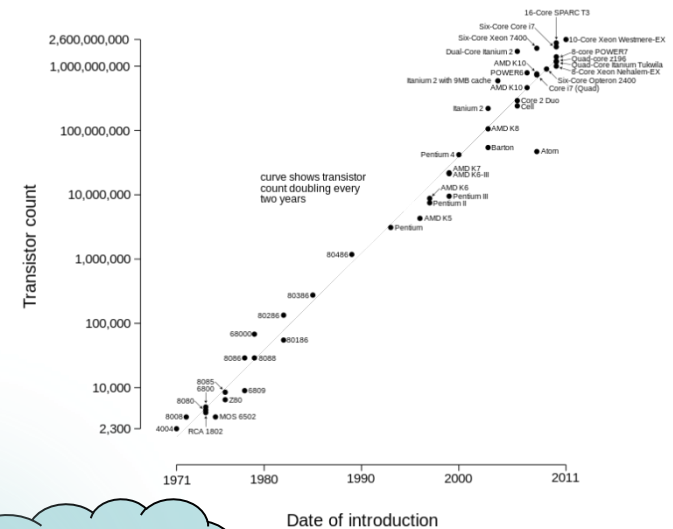
- **TECHNOLOGY** and how it is used in decision making.
  - More accessible
  - Cheaper
  - More user friendly
  - More integrated
  - More global
  - Faster



## Rate of technology advancement

- "Moore's law" (1965) is the observation that, over the history of computing hardware, the number of transistors in a dense integrated circuit has doubled approximately every two years.
- Some believe technology will reach saturation but most agree this law is still good for another 20 years.

Microprocessor Transistor Counts 1971-2011 &amp; Moore's Law



# So what's my vision? – from what I “imagine” might be possible!!

- Remote sensing via satellites will tell me about my crop
  - Nutrient status
  - Water requirements
  - Crop health - pest and disease
  - Yield forecast
- Farms will be managed by the square metre, not block.
- Variable rate application will be standard and linked to “expert” systems that can calculate gross margin on the run.
- Soil health will be quantifiable, monitored and much more easily managed.



## My vision - (cont'd)

- The tractor will be the input source for data collection – the new farm office!
- Every aspect of my farm operations will be captured and stored for trending and analysis.
- We will have smart equipment that can remember sequences and will not need drivers – well, for some operations!!
- Swarm robotics, “Agbots” and drones will be used in crop protection and data gathering.
- Genetically Modified planting material will be the norm and accepted as a solution to environmental sustainability. That might come as a surprise to some!



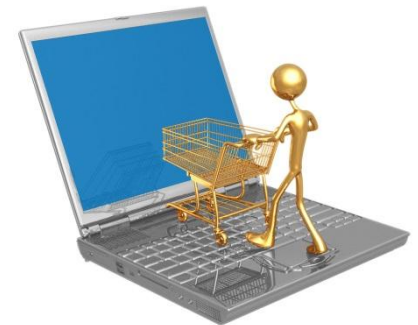
## My vision - (cont'd)

- Weather will be better understood and cropping decisions will be “risk” managed.
- Farm environmental out flows will be quantifiable, measured and managed.
- There will be increased use of sustainable energy sources – improved solar efficiencies. Maybe a hybrid tractor??
- Marketing will be fully flexible and backed by “globally driven” expert systems, keeping me fully up to date.
- ... and I want to know and do all this **NOW** and from my mobile communication device.



# What advice will I need?

- Soil health – status and remedies for correction
- Varieties – micro environment and climatic response advice
- Labour management – tech screening and training, psychometric tools and productivity calculators
- Energy – monitoring and management advice
- Environmental - real time monitoring and awareness updates
- Global sourcing – for parts, chemicals, fertilizers etc – an “agricultural eBay”!!!
- Technology “use” advice
- **... the real change will be in detail of the advice, how I get it and how that advice is used to “risk” manage my operation.**





# What sort of people will I want?

- People who understand **I am running a business** - \$ focus.
- People who understand **time means money** – right advice at right time.
- People who understand the **complexity of my farm** - from soil heath to market price.
- People who are “**tech savvy**” – but no nerds!
- People who are **innovative and embrace change** – free thinking – remember Moore’s Law?
- People who are **practical and outcome focussed** – hands-on experience.
- People who understand the **art of “communication”** in the change management process – think about that one!

An aerial photograph of a vast, flat agricultural landscape. A wide, light-colored dirt road or track runs diagonally from the bottom left towards the top right. Several tractors are visible in the distance, working in the fields. Some tractors are leaving long, white trails of dust or smoke behind them. The fields are a uniform brownish-tan color, suggesting they are either fallow or have been recently harvested. The overall scene depicts a busy agricultural operation.

**Are you up for it?**

**Thanks**

