









THREATENS THE PEA OF THE WORLD



SO WHAT ARE WE DOING ABOUT IT?

als Tuesda

ate with to

tempt at projecting California

CAMPAIGN TO CHECK THE POPULATION EXPLOSION

THE POPULATION BO The Back Page

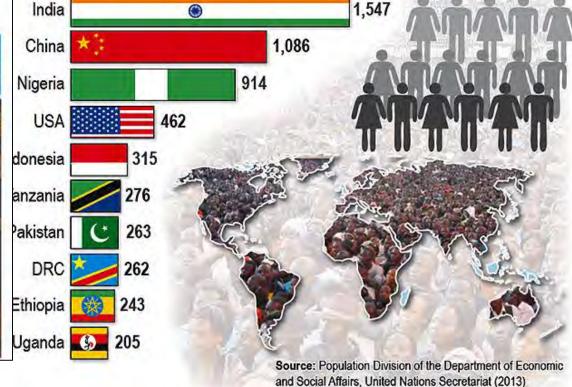
State population to double by 2040; pabies to blame

UniSuper We're Super Fund of the Year ...again!

Area Count SACRAMENTO — In their first

World's most populated countries in 2100

ho will profit from Australia's population boom?



Feeding a world population of 9.1 billion people in 2050 will require raising food production by 70% between 2005/07 and 2050.



9 billion dinner guests! Smarter Ways to Feed the Market

Brett Wiskar

Commercial Technology Director

Wiley

www.wiley.com.au/foodtech/





design, build & maintain food manufacturing processes & facilities so our clients can produce safe quality food for their customers.

What am I responsible for...

I look at digital, innovation, data (big & small), strategy, business models & the future of our industries & markets.



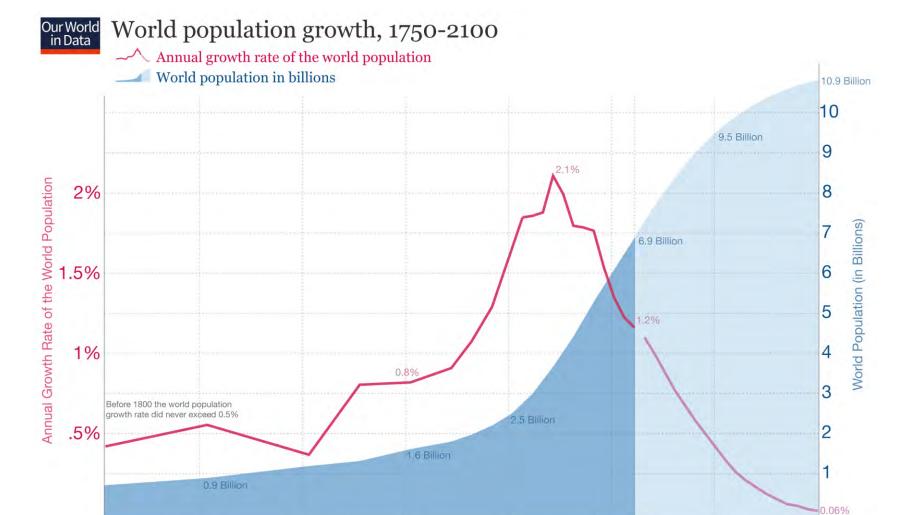
World Population: Who's Going Up and Who is Going Down?

	2010	2030	2050
	- billion-		
World	6.9	8.2	9.0
Africa	1.0	1.5	2.0
Asia	4.1	4.8	5.1
Europe	0.7	0.7	0.7
Latin America & Caribbean	0.6	0.7	0.8
North America	0.3	0.4	0.5
Oceania	0.04	0.04	0.05

Source: UN (population scenario planning)







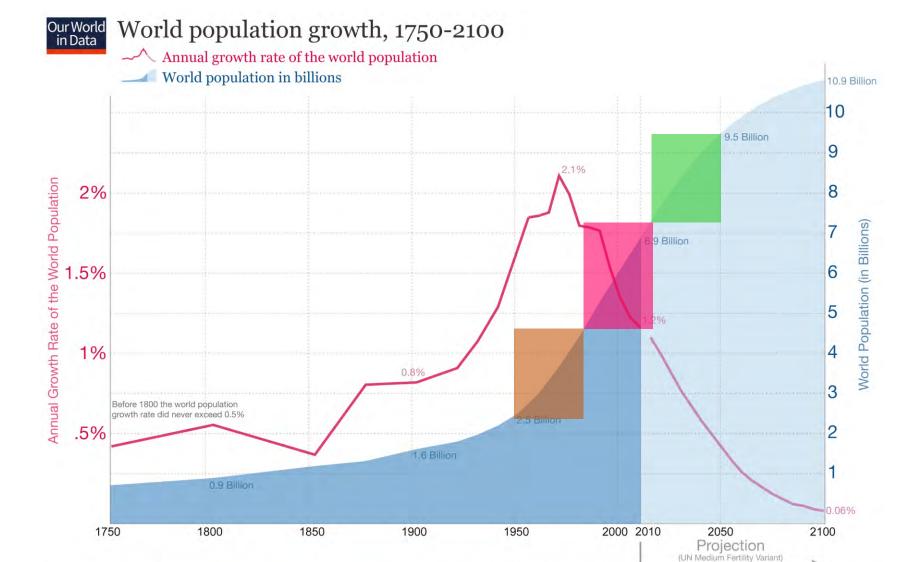
Data sources: Before 1940: Kremer (1993) – "Population Growth and Technological Change: One Million B.C. to 1990"; After: UN Population Division (2012), including population projection (medium variant)

The data visualization is taken from OurWorldinData.org. There you find the raw data and more visualizations on this topic.

Licensed under CC-BY-SA by the author Max Roser.

2000 2010

Projection (UN Medium Fertility Variant) 

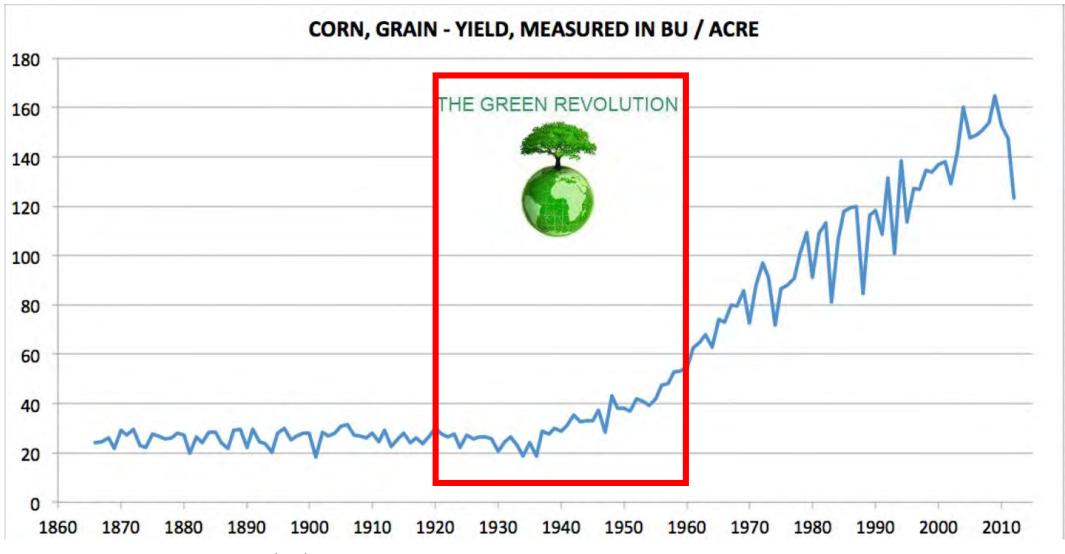


Data sources: Before 1940: Kremer (1993) – "Population Growth and Technological Change: One Million B.C. to 1990"; After: UN Population Division (2012), including population projection (medium variant)

The data visualization is taken from OurWorldinData.org. There you find the raw data and more visualizations on this topic.

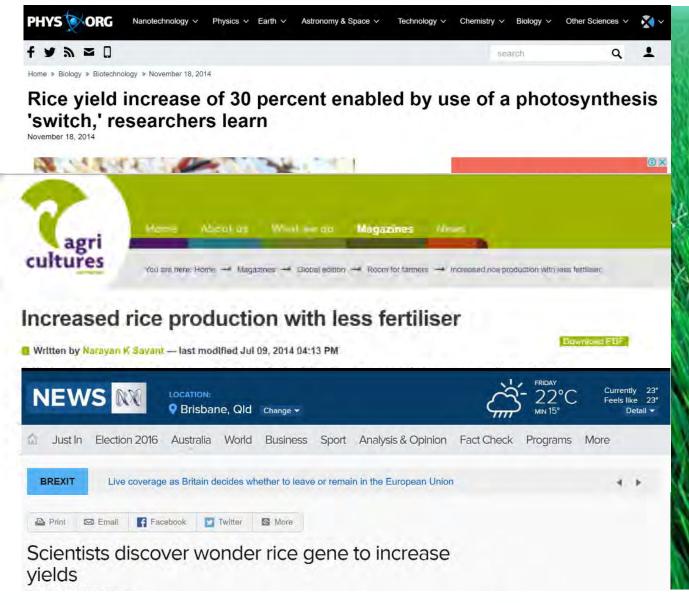
Licensed under CC-BY-SA by the author Max Roser.

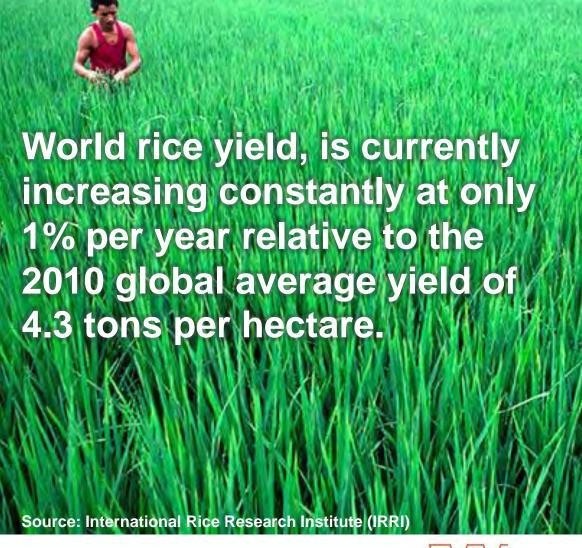




36.36872 litres = 1 bushel (BU)
Stuart Staniford, Ph.D. Adjunct Professor, Computer Science. Computer Science Department Cornell University





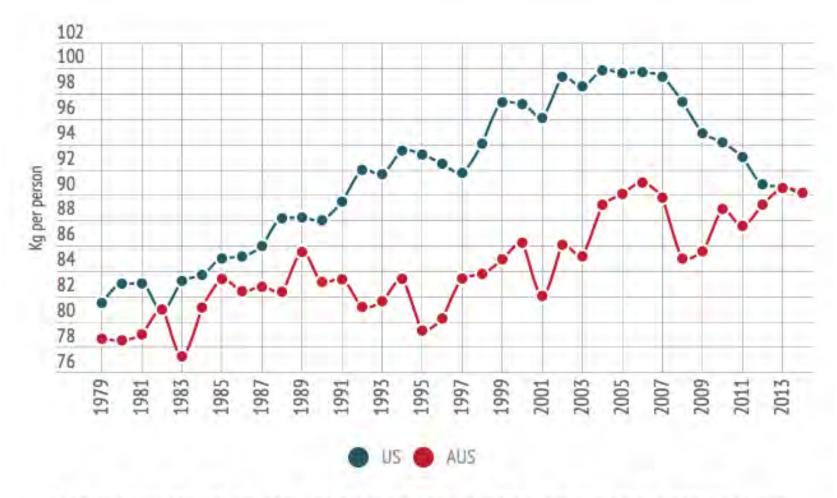






- Currently we consume 107 kg of rice per person per year.
- If we continue to improve our rice yield/hectare at the current rate of 1% per annum in 2050 we'll be producing 1,088,384,000 kg of rice.
- This will be 120 kg rice per person an increase per head of 12% per person.

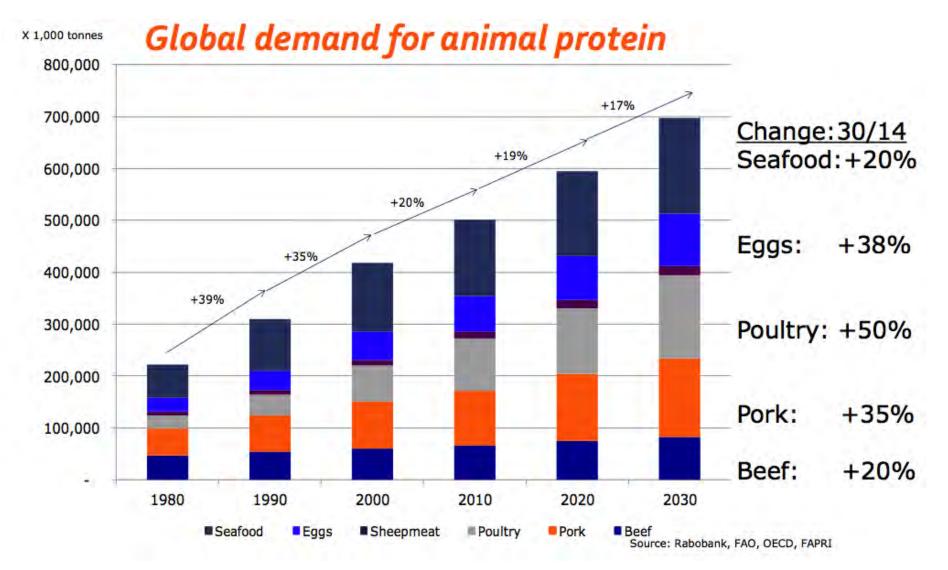




Australia and the US are the world's most enthusiastic meat-eating nations. (Includes beef, veal, pork, chicken and lamb) (add 12Kg+ for fish & total 100kg.)

Source: OECD-FAO 2015





Source: Nan-Dirk Mulder, Rabobank, 2015



Protein feed conversion ratios

Animal (protein source)	Feed mass to desired output
Beef cattle	6 (4.5 – 7.5)
Pigs	4.0 - 4.5
Sheep	5 – 6
Poultry	1.6 - 1.8
Crickets	1.7
Farmed Fish (salmon or catfish)	1
Fish (Talapia)	1.5
Rabbits	2.5 – 3.0 (grain fed) or 3.5-4.0 (forage diet)

Feed conversion ratio (FCR) is the ratio of inputs to outputs; it is the inverse of "feed efficiency" which is the ratio of outputs to inputs.







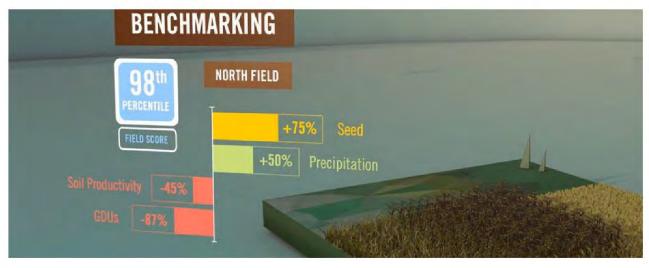


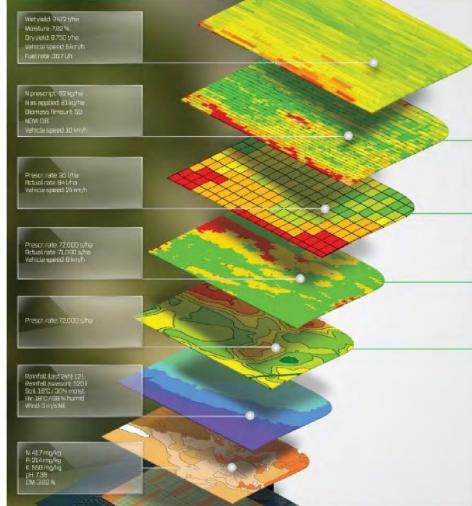






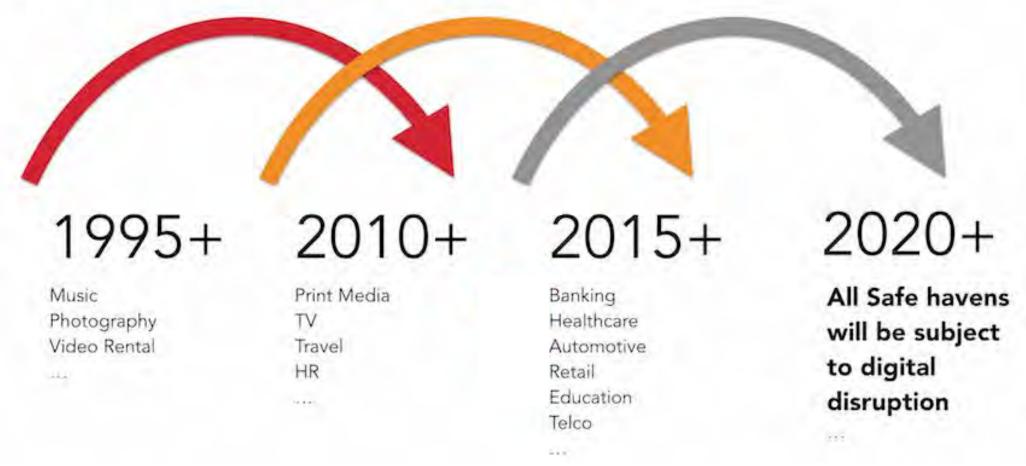






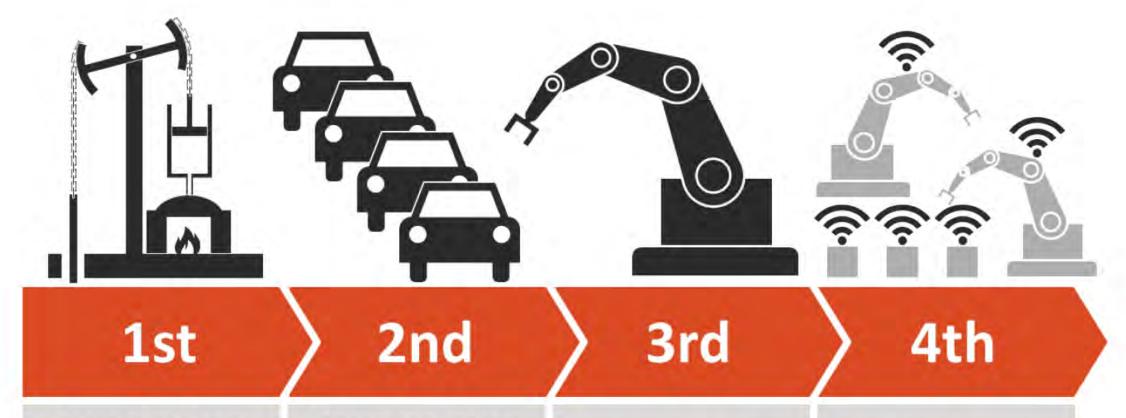


Waves of Digital Disruption



The 'dirty industries' are happening now...





Mechanization, water power, steam power Mass production, assembly line, electricity

Computer and automation

Cyber Physical Systems





By the (very big) numbers;

In the past 2 years the world has created more data than in the entire previous history of the human race.

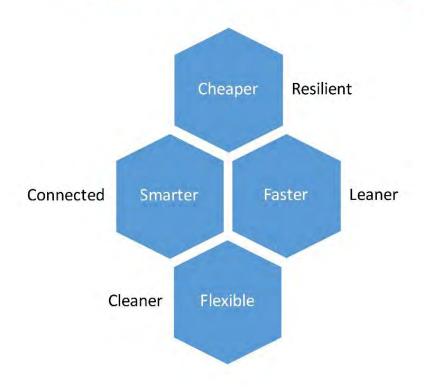
Within five years there will be over 50 billion smart connected devices in the world, all developed to collect, analyze and share data.

At the moment less than 0.5% of all data is ever analysed and used.





The future of your organisation is...



We need to find ways to make your costs lower or more flexible.

We have to find a better way.



Data driven disruption

How – find people who can look at the data in your business and find ways to make it work for you.

Don't be incremental - be revolutionary.







A Smart Connected Businesses makes it's decisions based on data intelligence

I want you to control of your own destiny.

I want you to be more integrated with your supply chain.

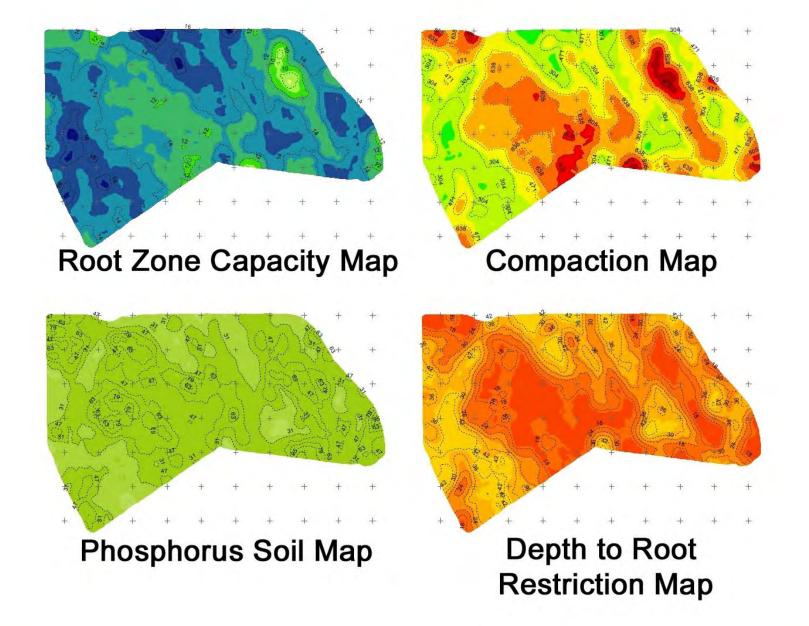
I want you to design your business to be more cost effective.

Move with certainty – make fewer assumptions.

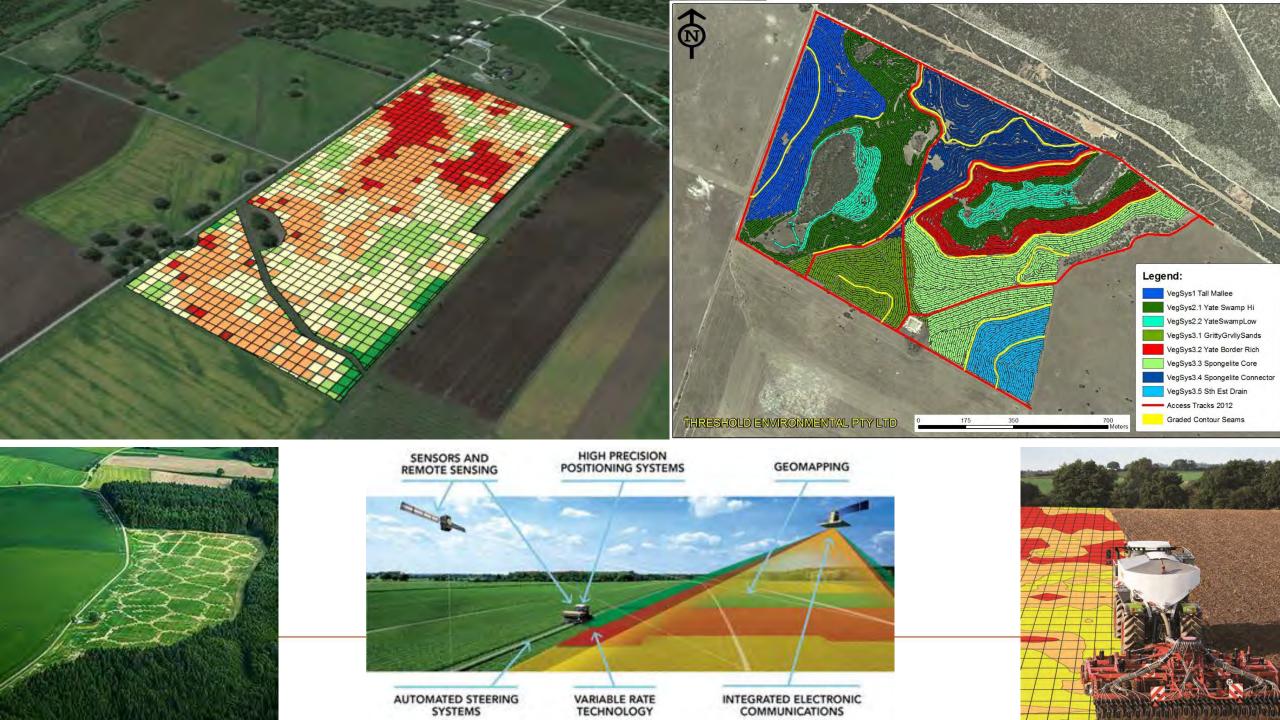


A brief history of the future...











Autonomous Logistics (No truck drivers – much less cost).



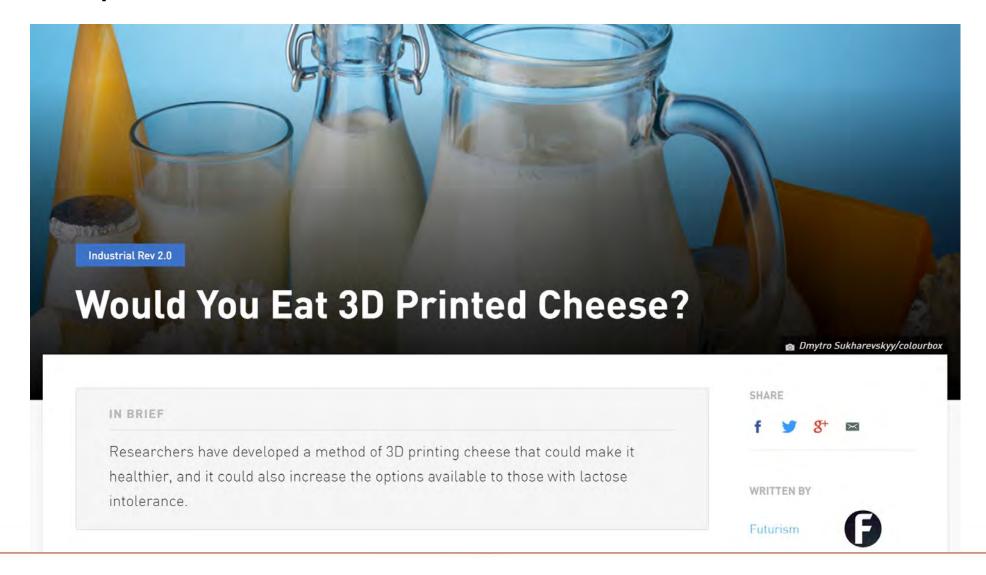


Future Health - Antibiotic resistance versus massive yield increases driven by data





3D printed Food





We're feeding 9.1 billion people & you have a role to play... but you'll only play that role if you are building a smarter food business based on insights and data.

Remember, there's no low hanging fruit.

Use your data to innovate, digitise and disrupt.



9 billion dinner guests! Smarter Ways to Feed the Market

Brett Wiskar

Commercial Technology Director

Wiley

www.wiley.com.au/foodtech/

