

The Innovative Supply Chain that will Feed the World

With the world demanding higher quality food and more of it, Australia can reap the economic rewards of selling outstanding product around the globe. To achieve this we must overcome the tyranny of distance, challenges on quality and quantity, shelf-life, new product development and innovation across the supply chain. Australia's impact on the global food marketplace will be determined by those who can innovate their way to efficiency.







A person in a dark suit stands on a vast, flat, sandy surface that stretches to the horizon. Above them, the Earth is visible as a large, curved, blue and white sphere against the blackness of space. The person's shadow is cast on the ground. The text "Feeding us all is going to be a problem" is written in white at the bottom of the image.

Feeding us all is going to be a problem

The Innovative Supply Chain that will Feed the World

Brett Wiskar

Commercial Technology Director - Wiley
www.wiley.com.au/futurefoodBNE/



**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.



We believe in making a difference & creating a better future



I HAVE GOOD NEWS
... & I have bad news

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

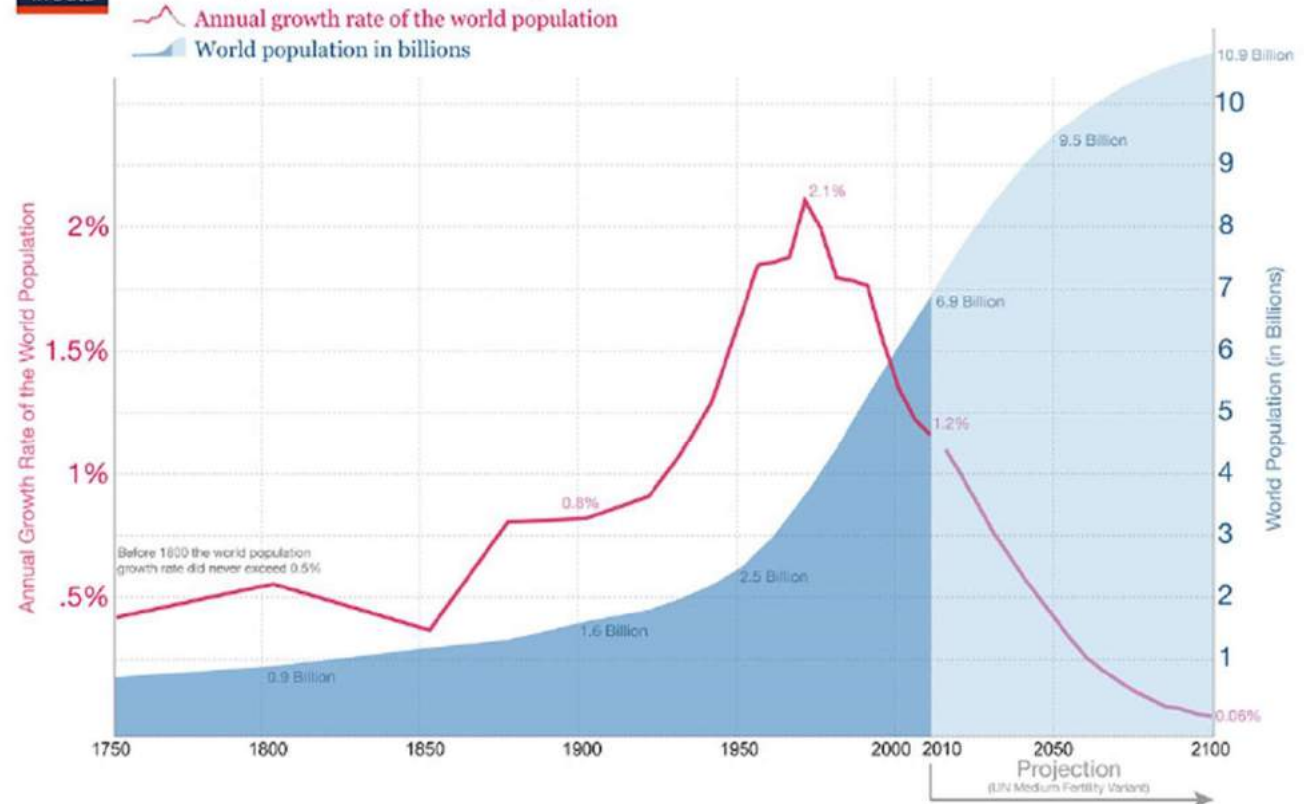
	2010	2030	2050
	billion	billion	billion
World	6.9	8.2	9.0
Oceania	0.04	0.04	0.05
Asia	4.1	4.8	5.1
Africa	1.0	1.5	2.0
Europe	0.7	0.7	0.7
Latin America & Caribbean	0.6	0.7	0.8
North America	0.3	0.4	0.5

Source: UN (population scenario planning)

Good news...

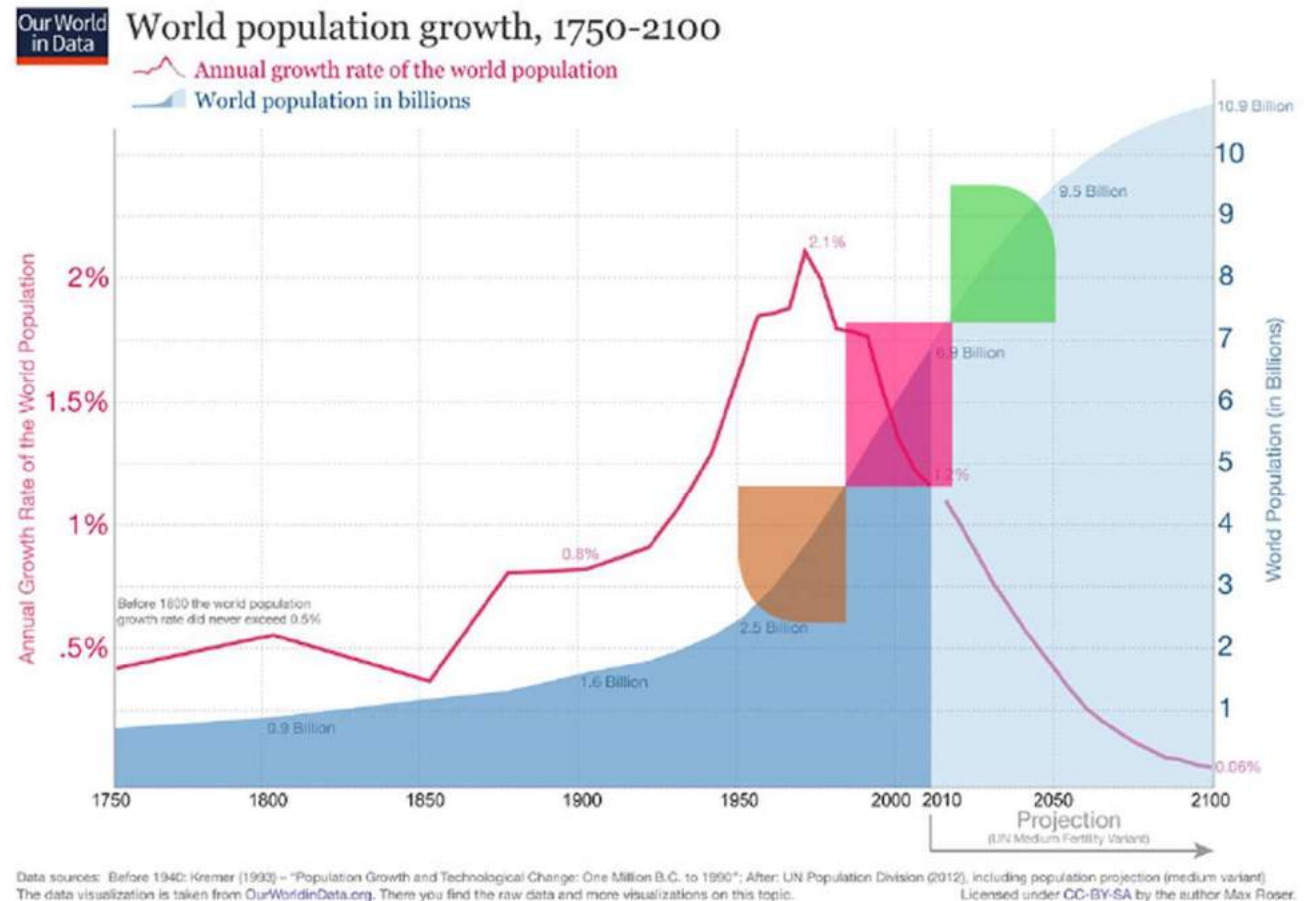
Our World in Data

World population growth, 1750-2100



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.

Good news...

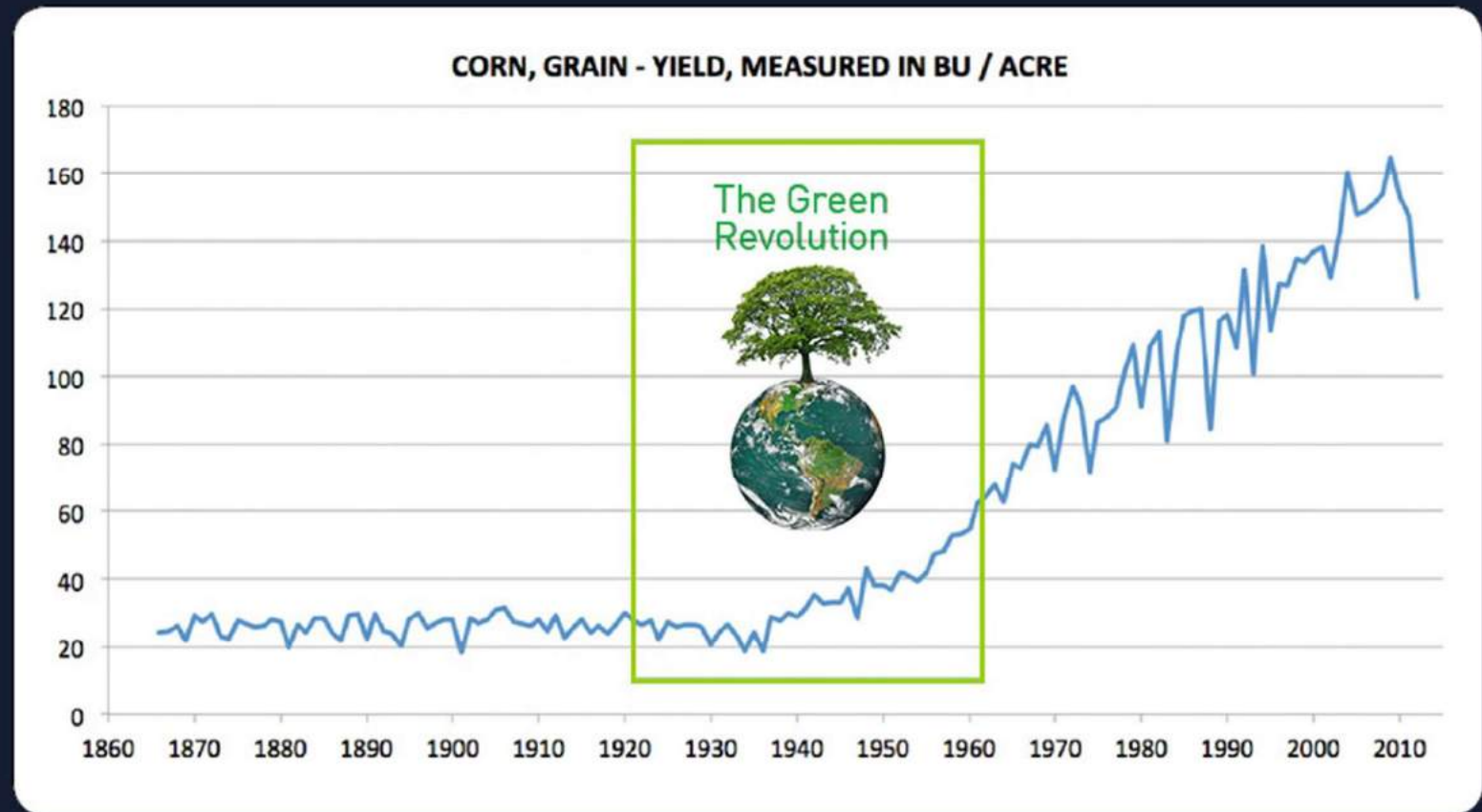


**Good
news...**

The Green Revolution



Good news...



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

Bad news...

We can't do it that way again
because the low hanging fruit
has already been picked



The Next Green Revolution



The Innovation Revolution

We're well positioned.

- Agriculture to become Australia's next \$100 billion industry by 2030
- 65% of Australian Ag is exported
- In 2014, Australian Ag & food exports totalled \$44.3 billion.
- This equated to 13.6% of the total value of Australia's goods & services exports that year.

AUSTRALIA'S TOP AGRICULTURE, FISHERIES AND FORESTRY (a) EXPORTS 2014

Rank	Commodity (b) (c)	\$ million	% share
1	Beef	7,751	17.5
2	Wheat	5,920	13.4
3	Meat (excl beef)	3,733	8.4
4	Wool & other animal hair (incl tops)	2,417	5.5
5	Cotton	2,008	4.5
6	Wine	1,858	4.2
7	Barley	1,760	4.0
8	Live animals (excl seafood)	1,617	3.7
9	Oil-seeds & oleaginous fruits, soft	1,605	3.6
10	Sugars, molasses & honey	1,592	3.6
11	Milk, cream, whey & yoghurt	1,564	3.5
12	Fruit & nuts	1,166	2.6
13	Animal feed	1,161	2.6
14	Vegetables	1,044	2.4
15	Hides & skins, raw (excl furskins)	1,026	2.3
16	Edible products & preparations	1,016	2.3
17	Crustaceans	933	2.1
18	Wood in chips or particles	840	1.9
19	Cheese & curd	780	1.8
20	Cereal preparations	708	1.6
TOTAL AGRICULTURE, FISHERIES & FORESTRY EXPORTS		44,308	100.0

Supply Chains have 2 major problems

Supply Chains have 2 major problems

(People & Money)

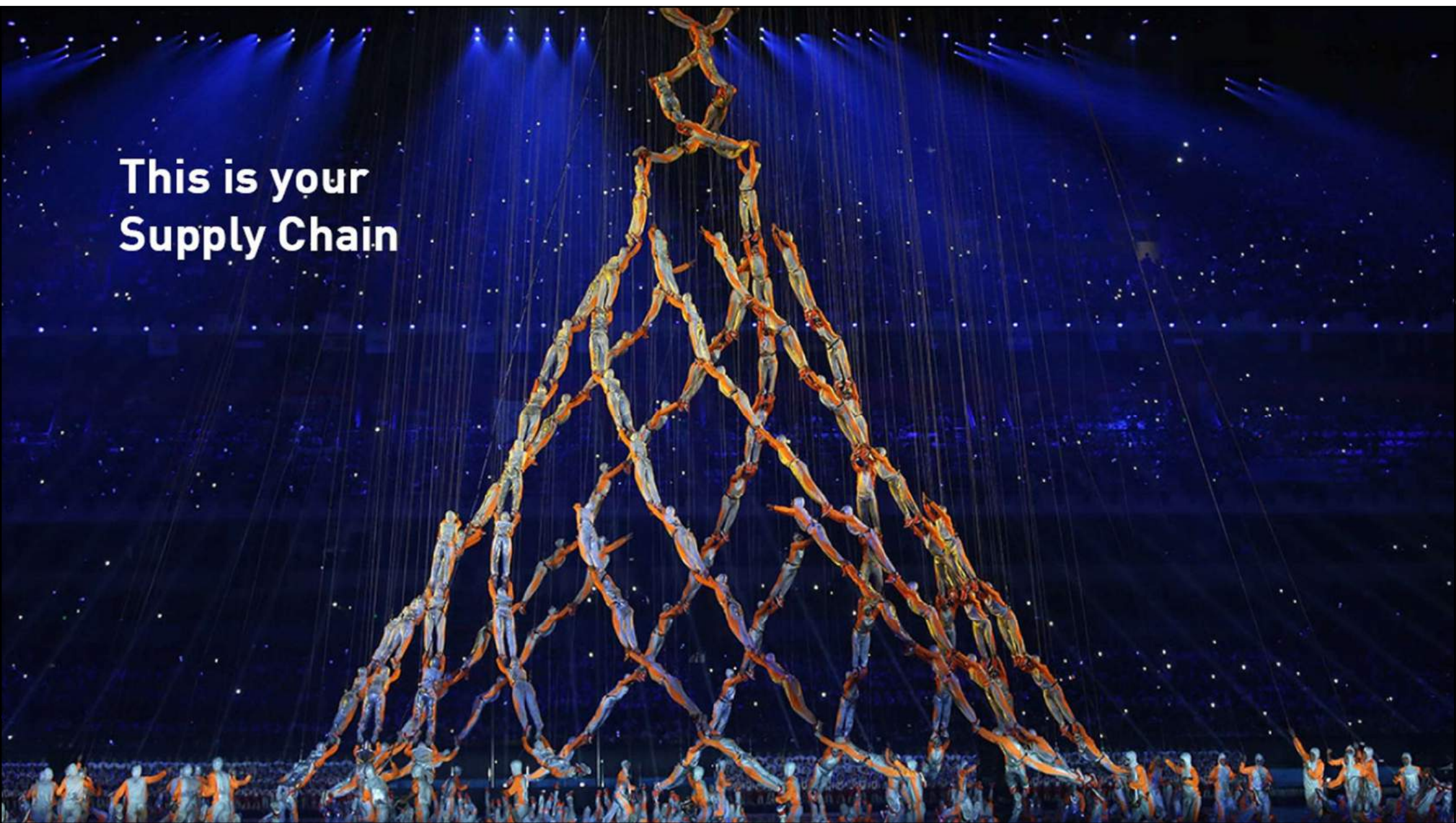
“The most unreliable thing in the world is human relationships”

Jack Ma

CEO & Founder Alibaba



**This is your
Supply Chain**



This is your Supply Chain





Supply Chain innovation

The diagram is set against a blue background with a world map and a grid. It features three central orange rounded rectangles. To the left, a hand with a watch is shown. To the right, a hand with a watch is shown. A calculator is at the bottom center. A document with a pie chart is at the top center. A circular arrow connects the three central boxes. The word 'Customer' is in a circle on the right. The words 'Raw Material' and 'Supplier' are partially visible on the left. The background includes various icons like an airplane, a globe, and a magnifying glass.

Influence
(Take control)

Efficiency
(Redefine how we deliver)

Intelligence
(Eliminate Assumptions & Inefficiencies)

Influence

*Vertical Integration vs.
Horizontal Integration*

Influence

Vertical Integration vs. Horizontal Integration

- **Vertical Integration**
Andrew Carnegie, bought out the suppliers
- **Horizontal Integration**
John Rockefeller, bought out the suppliers

RESOURCES

Raw materials, fields, forests, and farms



VERTICAL



MANUFACTURING

Production and processing

HORIZONTAL



HORIZONTAL

DISTRIBUTION

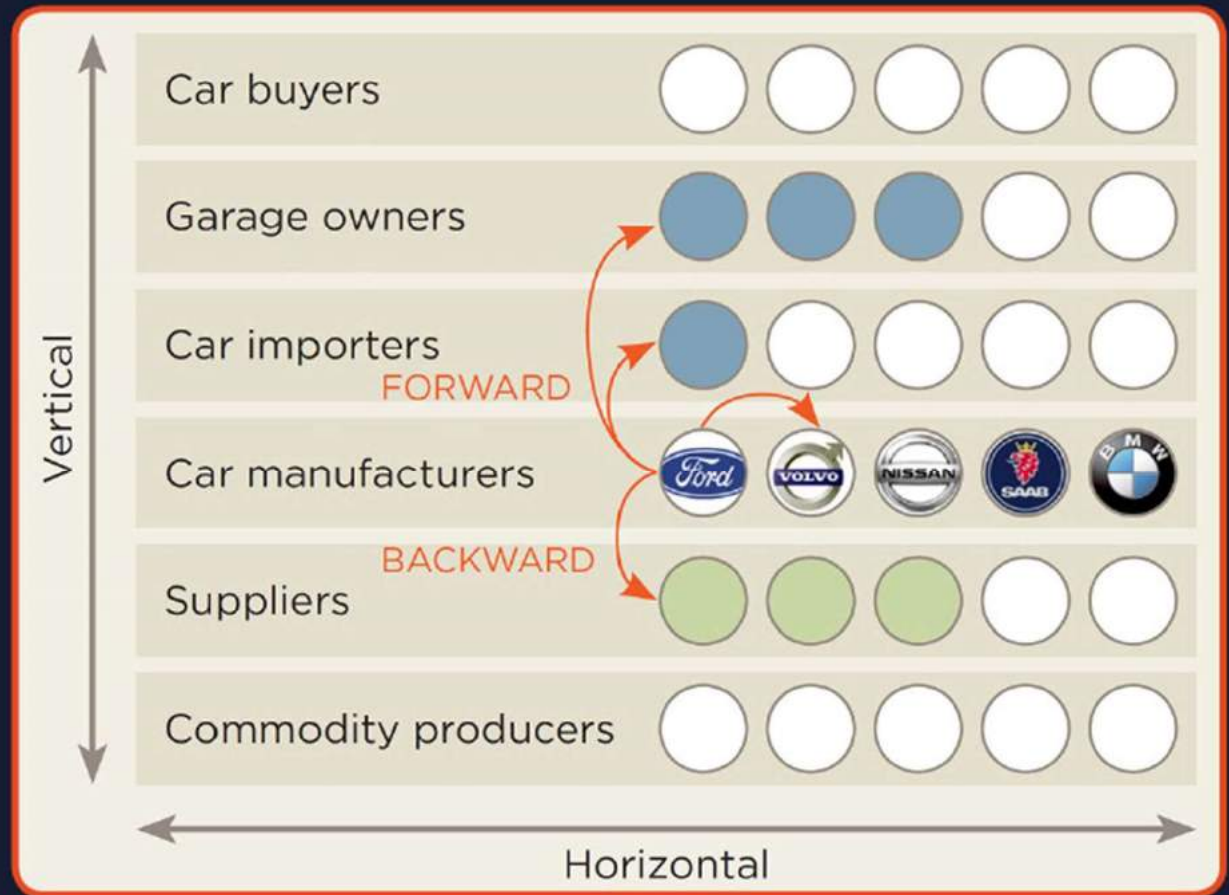
Shipping and transportation, delivery to customers



VERTICAL

Influence

Market/Supply Chain Integration



Influence



In 2008 the Tesla Roadster production run was built on a Lotus chassis.

In 2017 Tesla have their own sales channel, distribution, service delivery, retail and web sales, chassis design & production, global supercharger network, LI battery Gigafactory and they now own SolarCity which will deliver the power to customers across North America to recharge the vehicles.

Efficiency

Disintermediation

Disintermediation: removal of intermediary steps in a value chain.



Disintermediation



Disintermediation



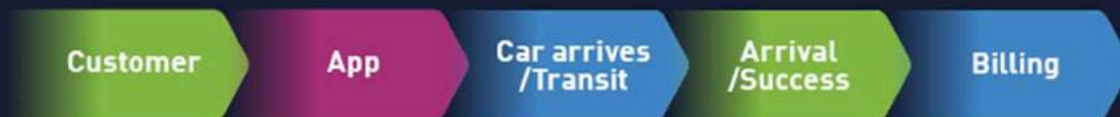
~~- Trip request~~
~~- Telco~~
~~- Dispatcher~~
~~- Dispatch system~~

- Transaction
- 3rd parties
- Fees
- Receipt



- Trip request

Disintermediation



- Transaction
- 3rd parties
- Fees
- Receipt

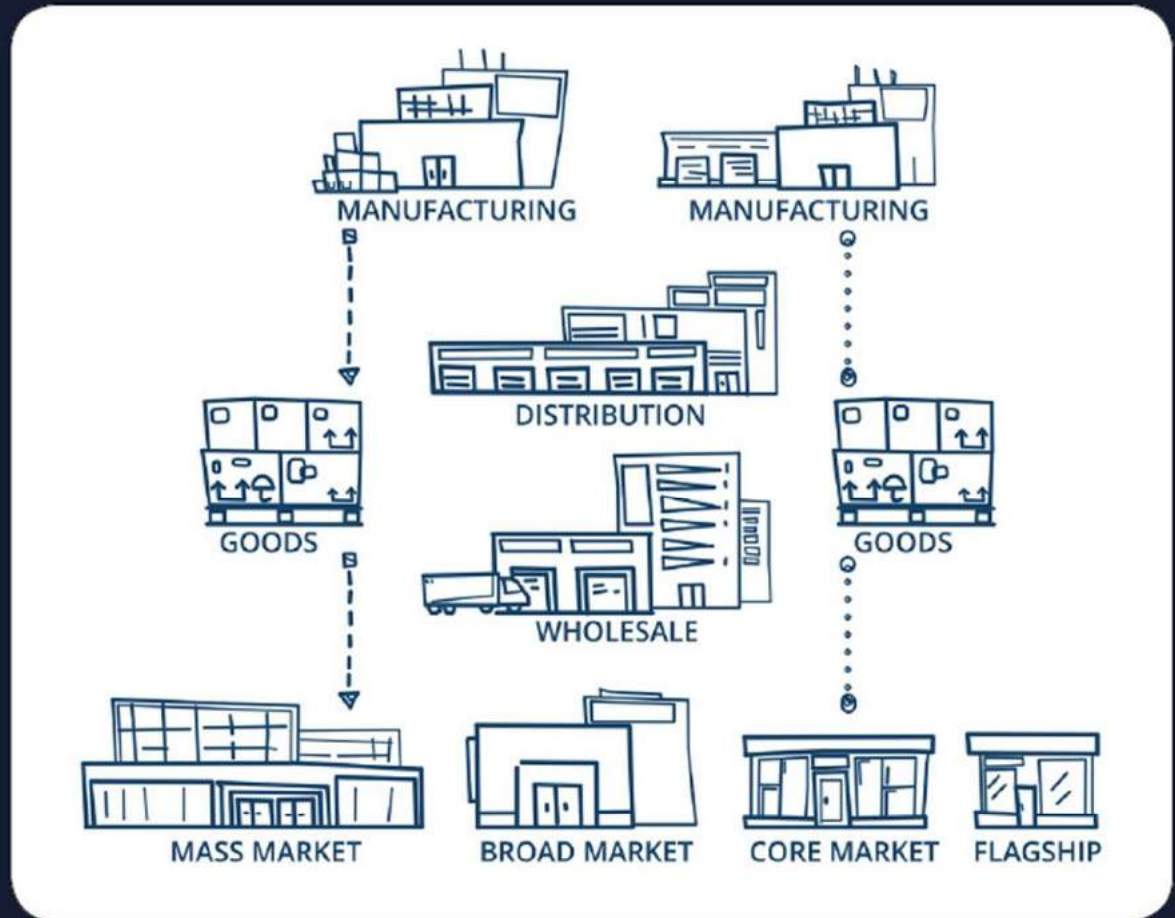


- Trip request

Disintermediation

is about opportunities...

- margin
- speed
- customer experience
- lifetime customer value (LCV)



Efficiency

Producer

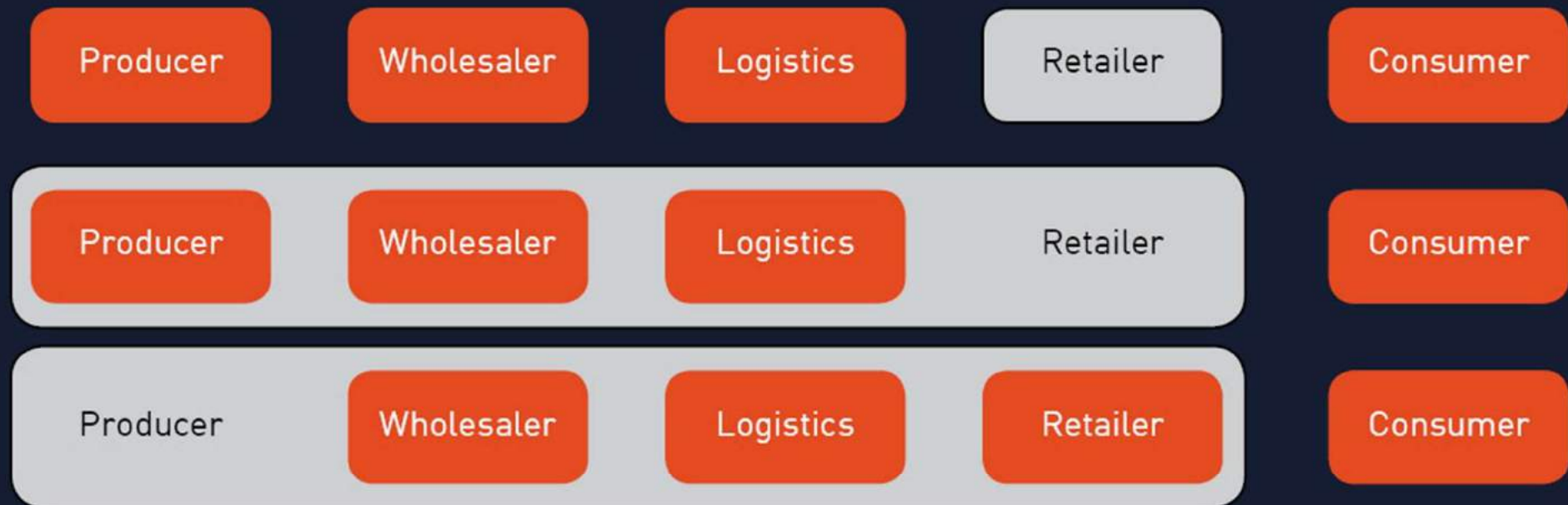
Wholesaler

Logistics

Retailer

Consumer

Efficiency



Producer

Wholesaler

Logistics

Retailer

Consumer

Producer

Wholesaler Logistics

Producer

Consumer

Consumer

amazon.com®



U B E R

Alibaba.com®
Global trade starts here.™

Producer

Wholesaler

Logistics

Retailer

Consumer

Producer

Wholesaler Logistics

Producer

Consumer

Consumer



Grewar Farm Vending

Fresh farm produce available from our VENDING MACHINES for your convenience

At Grewar Farm Vending we bring the food from our local fields to your fork.

The Grewar family are farmers and whole farm contractors based in East Perthshire for over a century, providing produce to well known brands such as Albert Bartlett and Scotty Brand.

Visit one of our easy to operate vending machines located across Tayside and beat the Christmas and New Year grocery queues - knowing that you'll be getting the best locally grown produce.

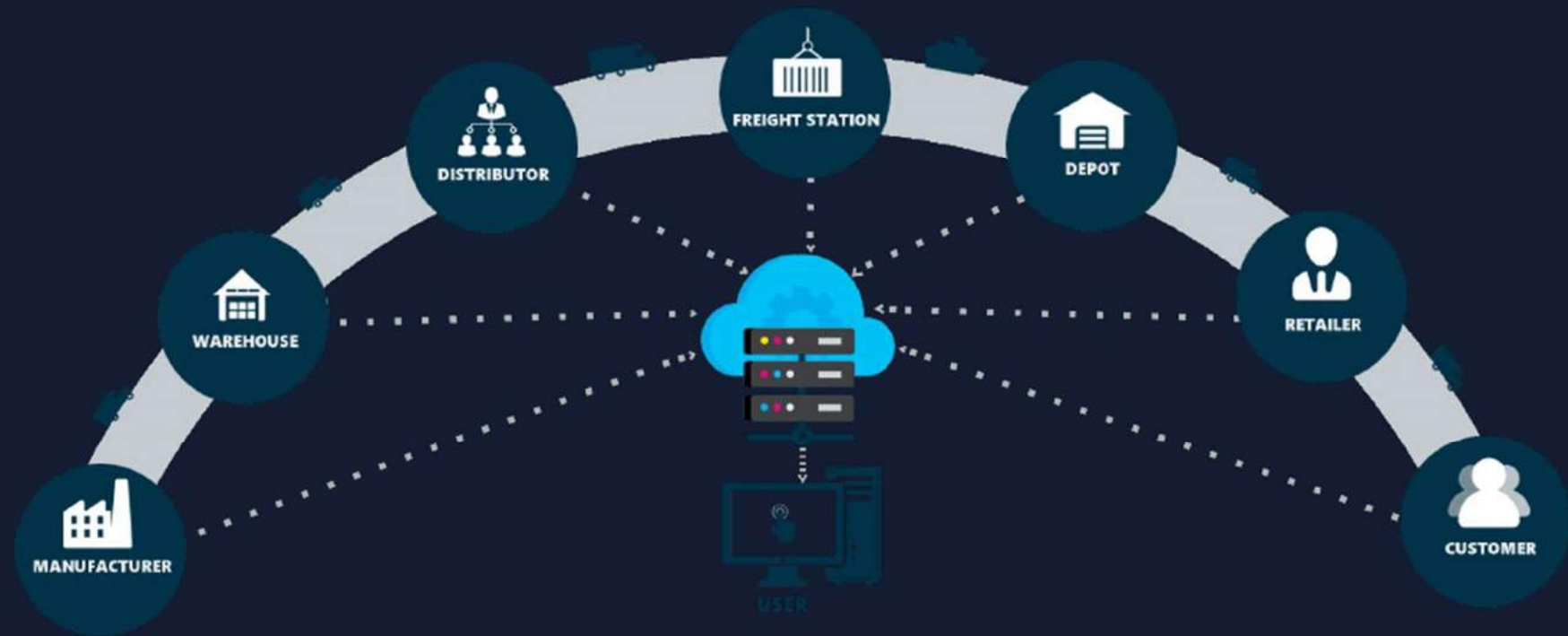
"The machine is another feather in the cap for the city, coming days after it was named a Unesco City of Design."



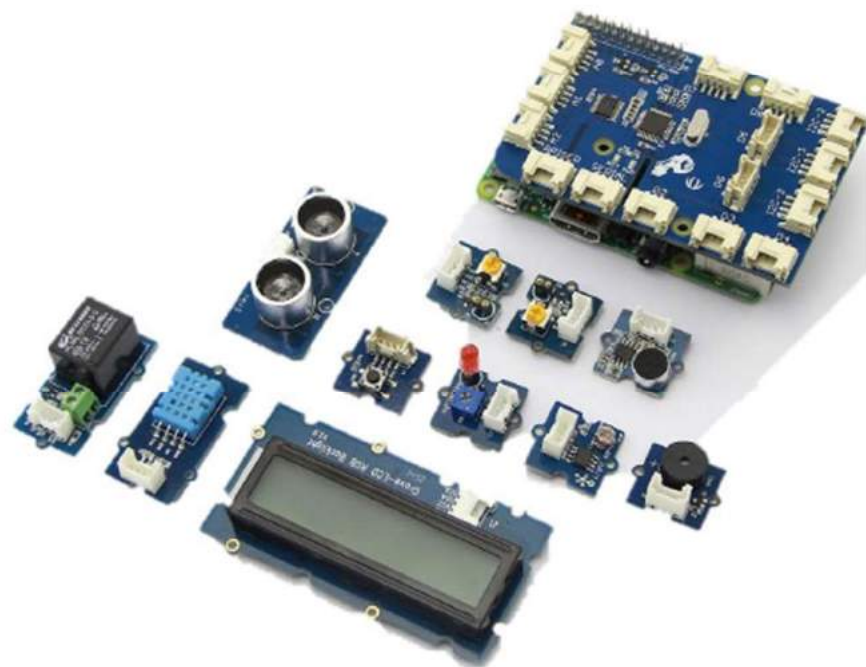
Connection

Data - Record, Monitor, Store, Analyse and Inform
Metrics that Matter
Improving Forecast Accuracy





\$13 trillion or 15% of the World GDP is spent on logistics



Real-time insights
& analysis

Efficiency & process
optimisation

Operational process
modelling

Automated decision
making

Pattern recognition

Predictive maintenance

Machine learning

Artificial intelligence



BIG DATA gas availability project



Supply Chain innovation

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