



A2EP – 2xEP Energy Productivity Summit
04-05 April, 2017
Australian National Maritime Museum
Darling Harbour, Sydney

Session 04

2xEP by 2030 by sector – Transport

Bo Christensen > presentation follows

Andrew Somers

Michael Apps

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Chair: Mark Gjerek



Doing more. Using less.



Future of Freight Transport

4th April 2017

Bo Christensen

“Imagine it is the early 90’s.”

Internet

Mobile Phones

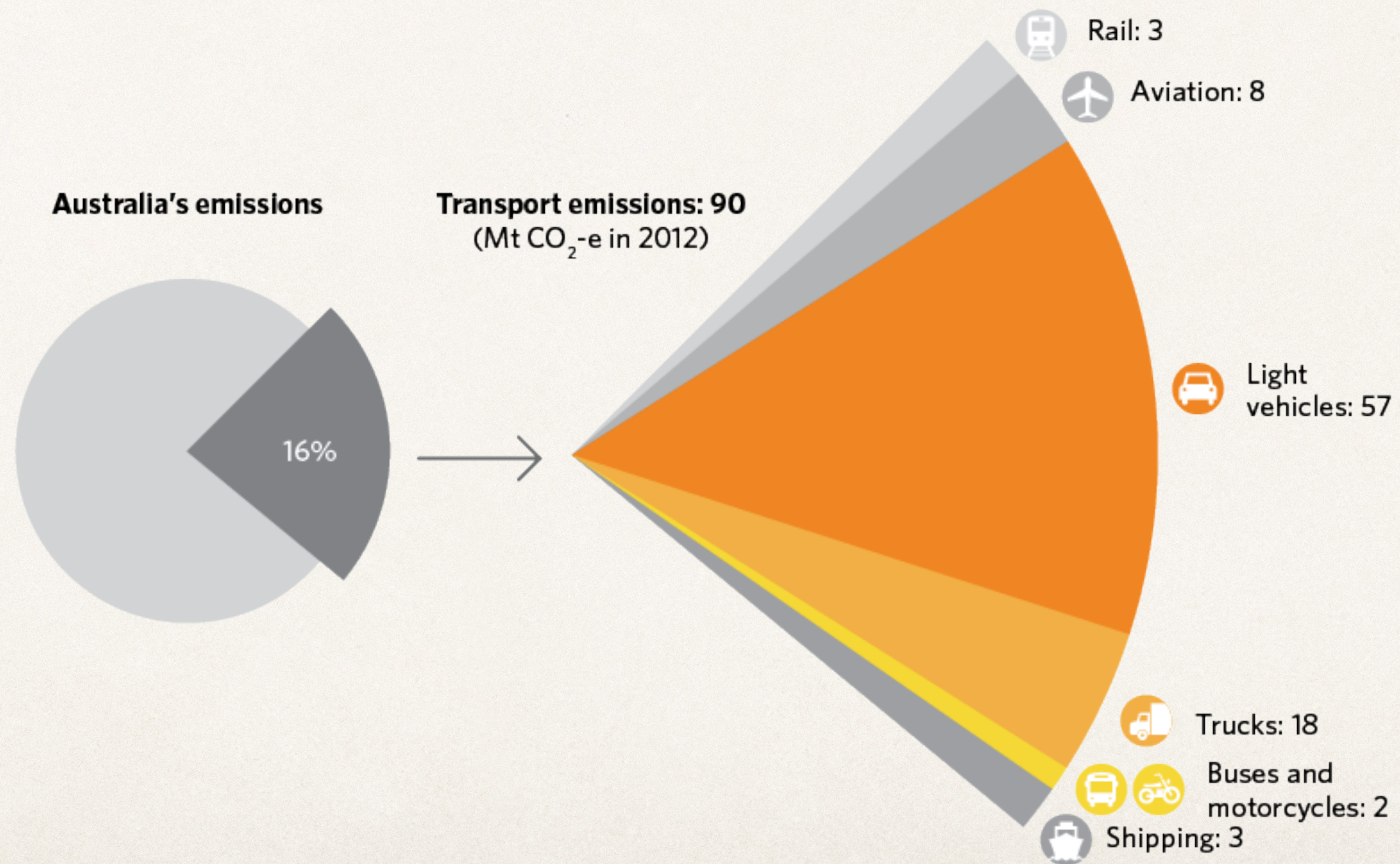
Personal Computers

“Can you imagine Google? Can you imagine the iPhone?”

BC

Freight Impact

(emissions)



We have had the Industrial Revolution.

Where is the next 'Henry Ford' moment?

"You can see the computer age everywhere except in the productivity statistics. - *Robert Solow*

The Big 4

(creating the next productivity revolution)

1. Customer Focus
2. Blockchain
3. Automisation
4. New Energy



Customer Focus

- Multiple 'networked' distribution channels, agile 3PL providers
- B2C expands
- Logistics networks recreate to suit new B2C market
- Customer-driven businesses will focus on use of technology-based skills rather than lower skilled labour
- Hyperlocal deliveries



Customer Focus

- Give me what I want, when I want it
- Consumers go to the next option at 'friction points'

For logistics companies this means

- **Significant reliance on cross-chain visibility of**
 - Assets
 - Resources
 - Demand
 - Inventory
- Creates pull for change



BlockChain

- Don Tapscott

Blockchain innovator

“.... blockchain technology facilitates peer to peer transactions without any intermediary such as a bank or governing body....”



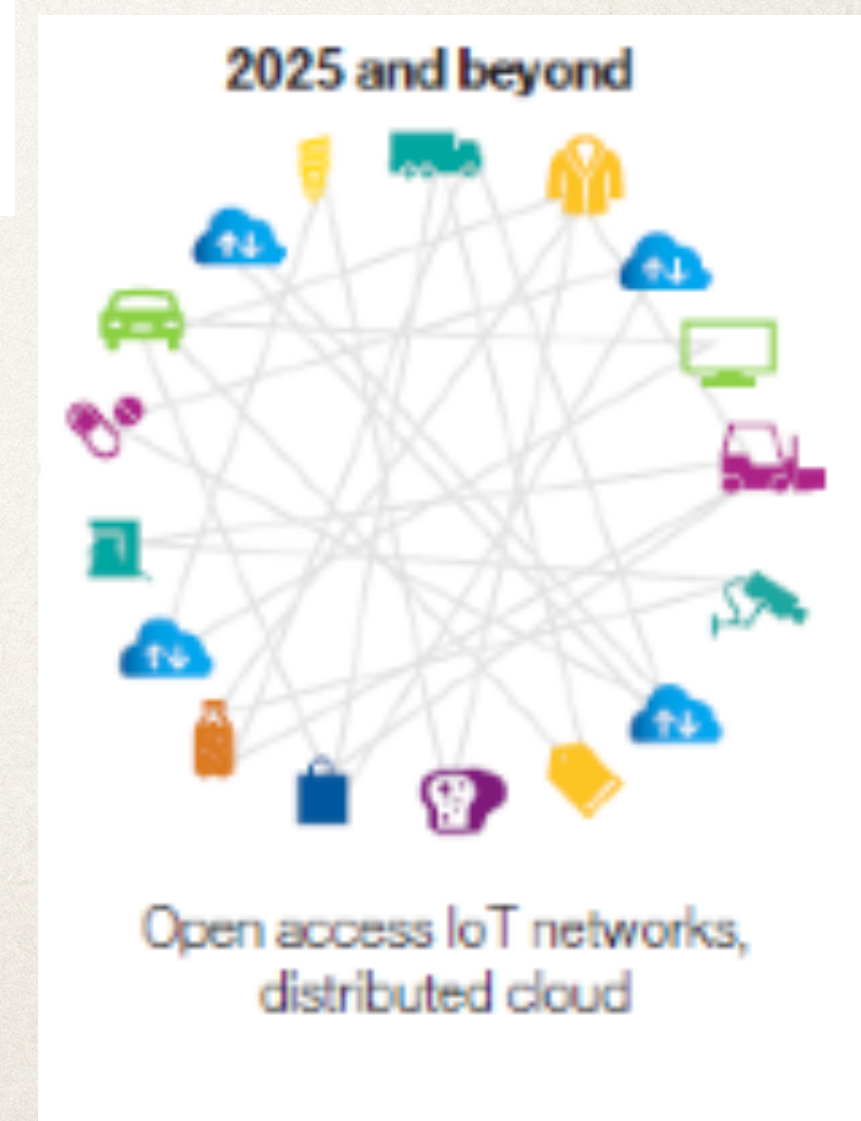
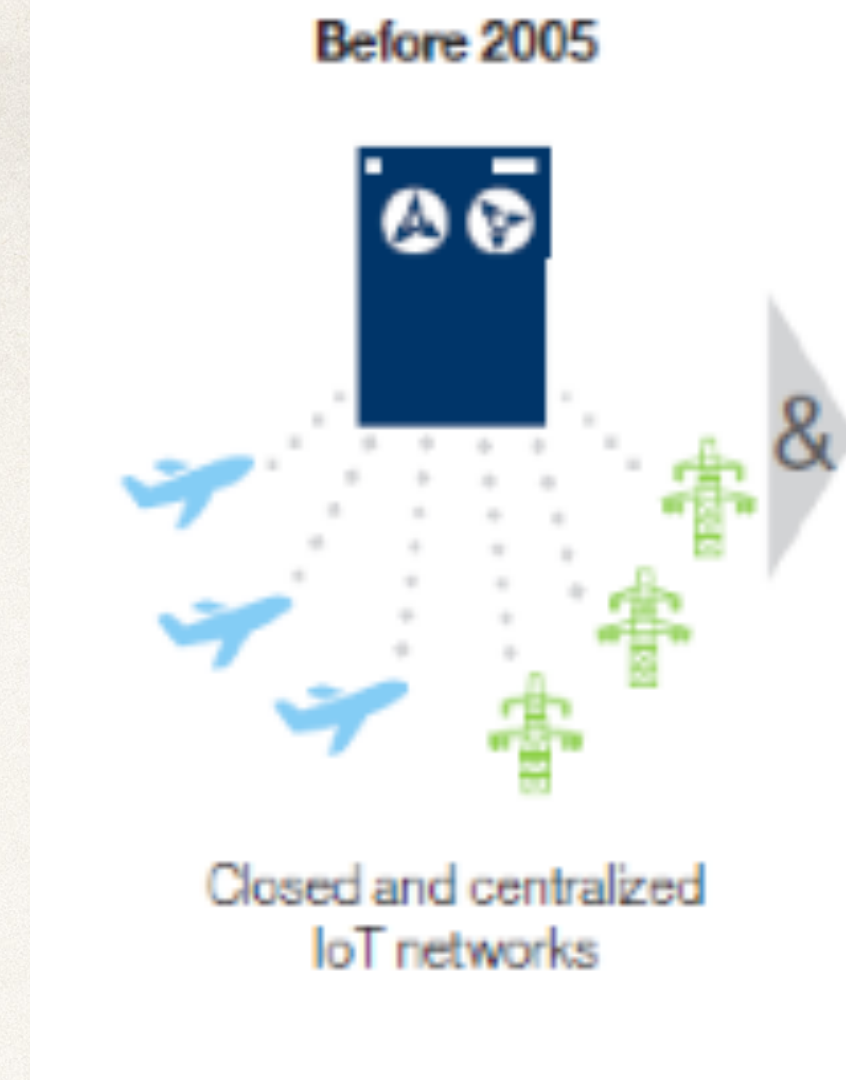
BlockChain

What is is BlockChain?

- A distributed ledger
- Supersedes traditional commercial structures and processes

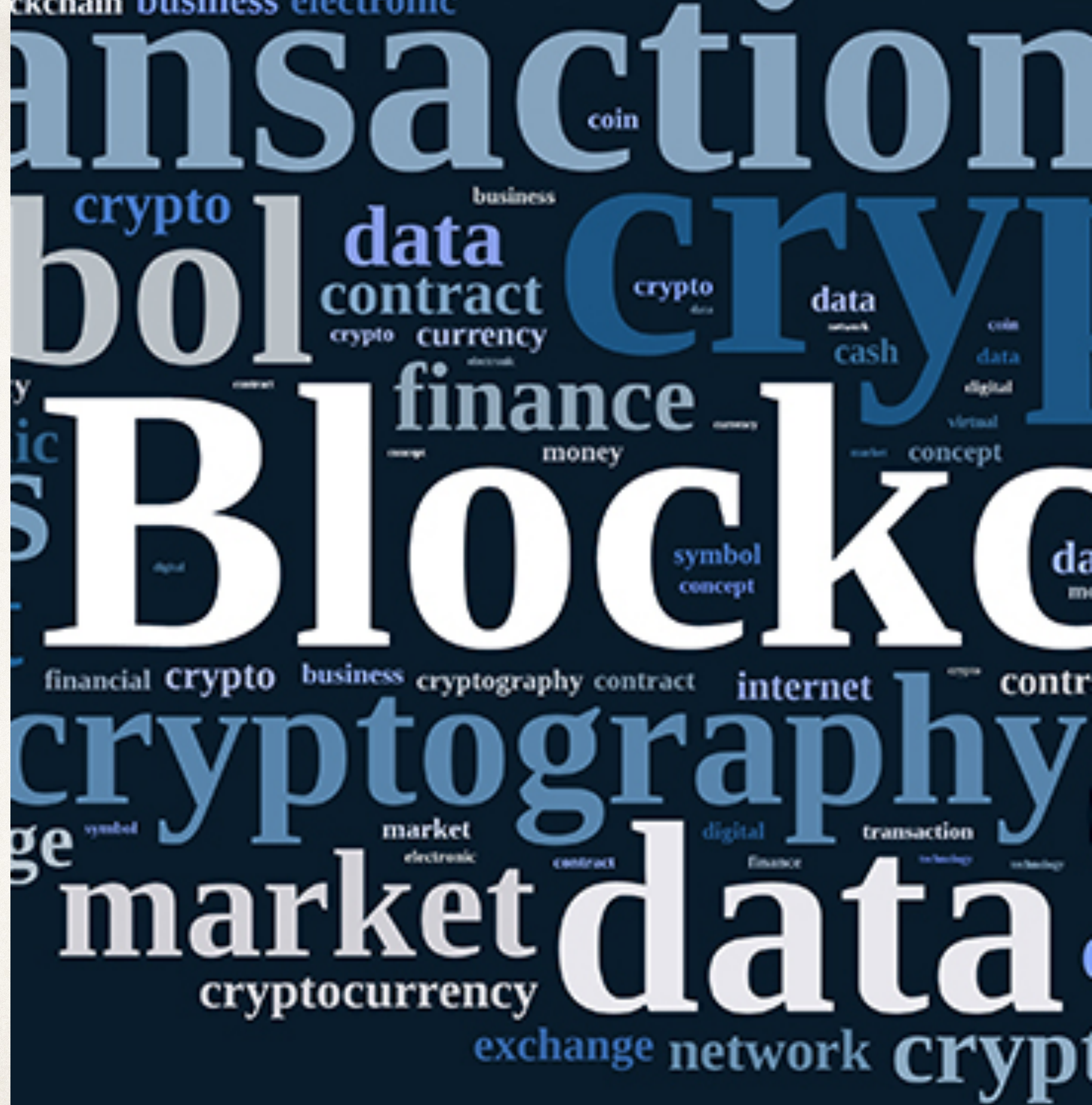
World Economic Forum predicts that by 2027 Blockchain will store 10% of global GDP, US\$8 trillion

- Can 'trade' anything of value



Blockchain

- What are the blockchain equivalents of Google, Facebook and Skype?
- Blockchain - 2nd generation of the internet
- Move from internet of information to internet of value
- Process and Market enabler



BlockChain

- Customer in the centre
- Shared single source of truth
- Removes a 'friction point'
- Reduces 'cycle time'
- Ultimate dispersed IoT
- IoT machines can use blockchain to replace 'trust'

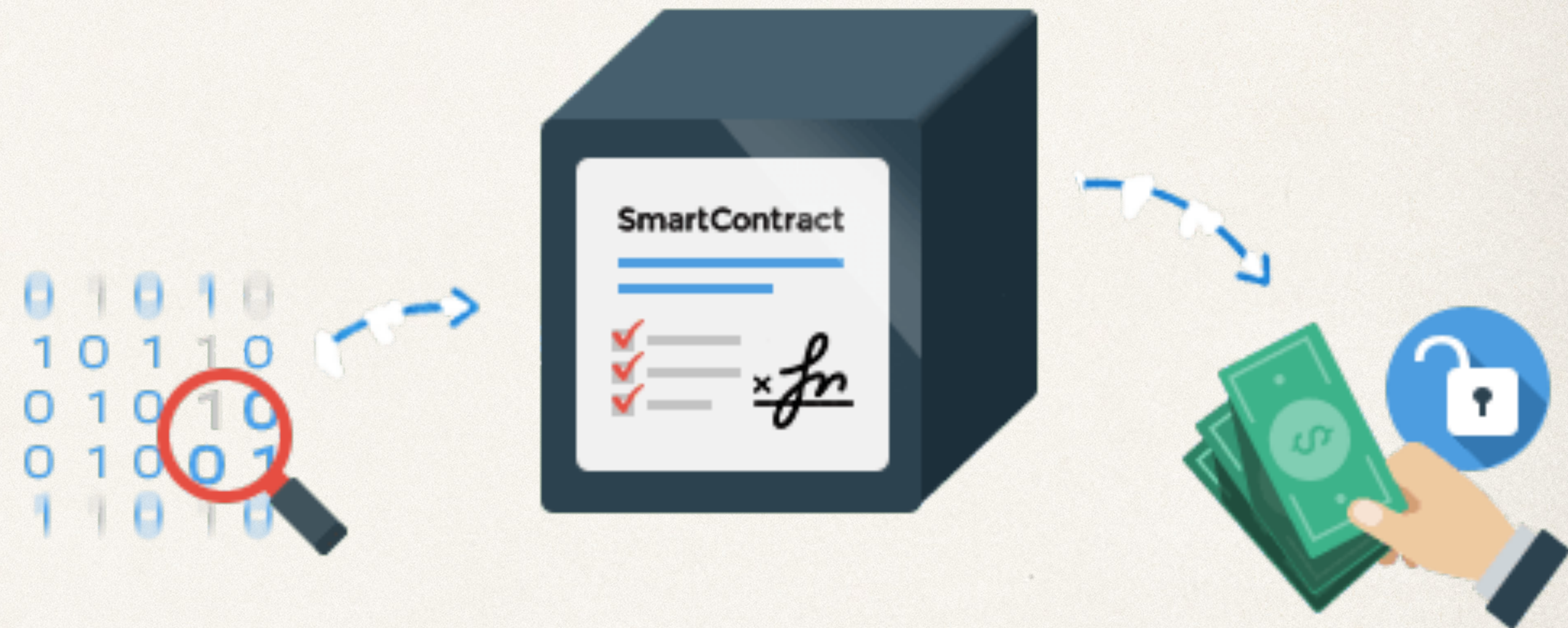


KEEP
CALM
AND
CARRY
BITCOIN

Blockchain

Smart contracts

- Acts as a complements or substitute for contracts
- Removes lawyers, banks and other intermediaries ('trusted 3rd parties')
- Saves money, time = increased productivity



Automisation

Impacts on

- Employment
- Asset utilisation
- Vehicle design
- Warehousing



Automisation

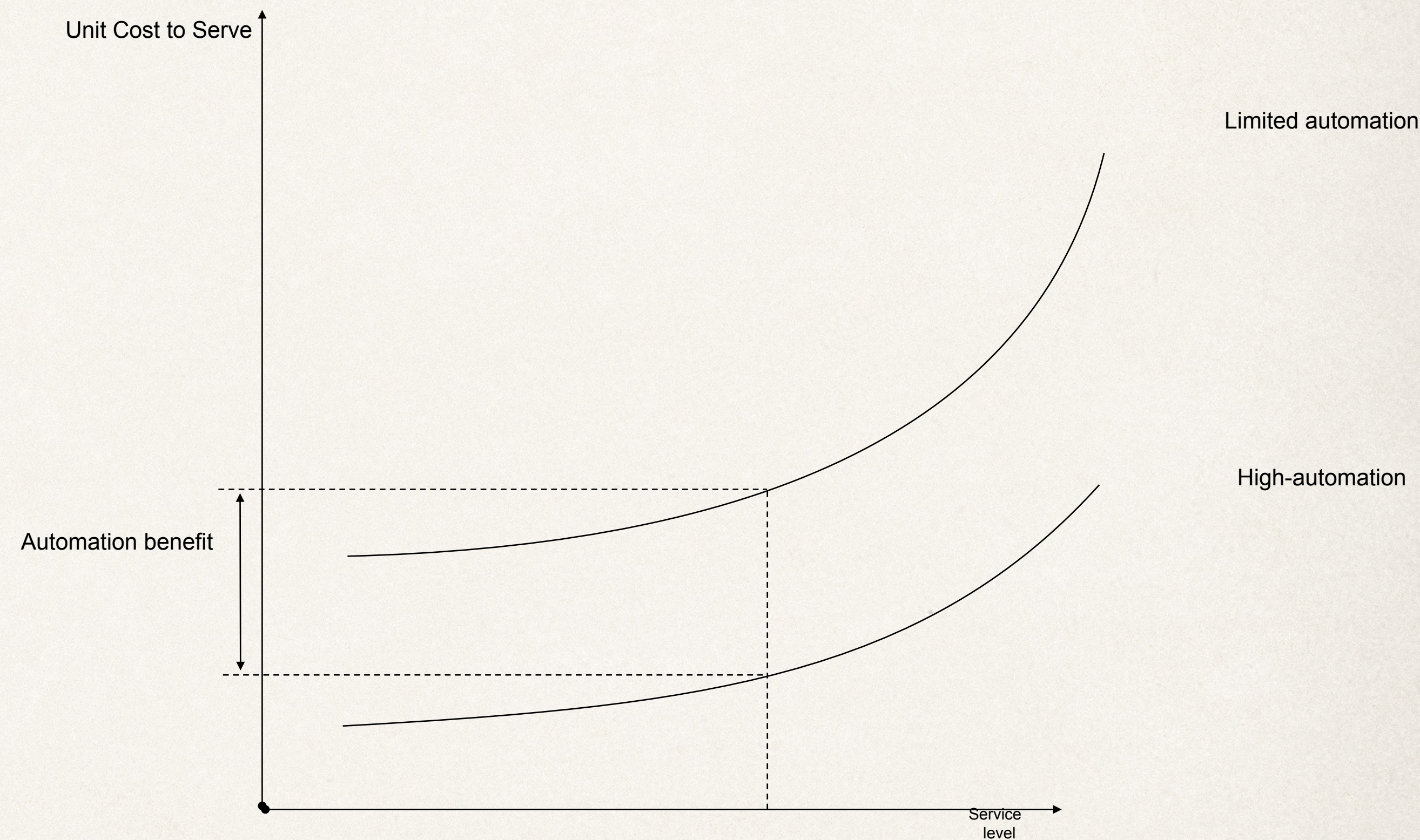
Removing labour equates to both

- Higher services levels
- Cost per unit

This incentivises automated warehousing (e.g. Dark stores, ASRS)

- Amazon now confirmed in Australia. Heavily reliant on automation.
- Applicable to road, rail and shipping

Automation shifts the unit cost curve



Automisation

- Long range truck drivers in most vulnerable category
- The average age of semi-skilled workers in logistics is 50-54, ten years ago it was about 40-45
- Unemployment decreases as the workforce ages and the number of younger workers declines
- The battle for resources likely to push up wages and further constrain access by logistics sector
- Is automisation a threat or saviour?



**PWC says up to
38% of jobs in US
'at risk' from robots**

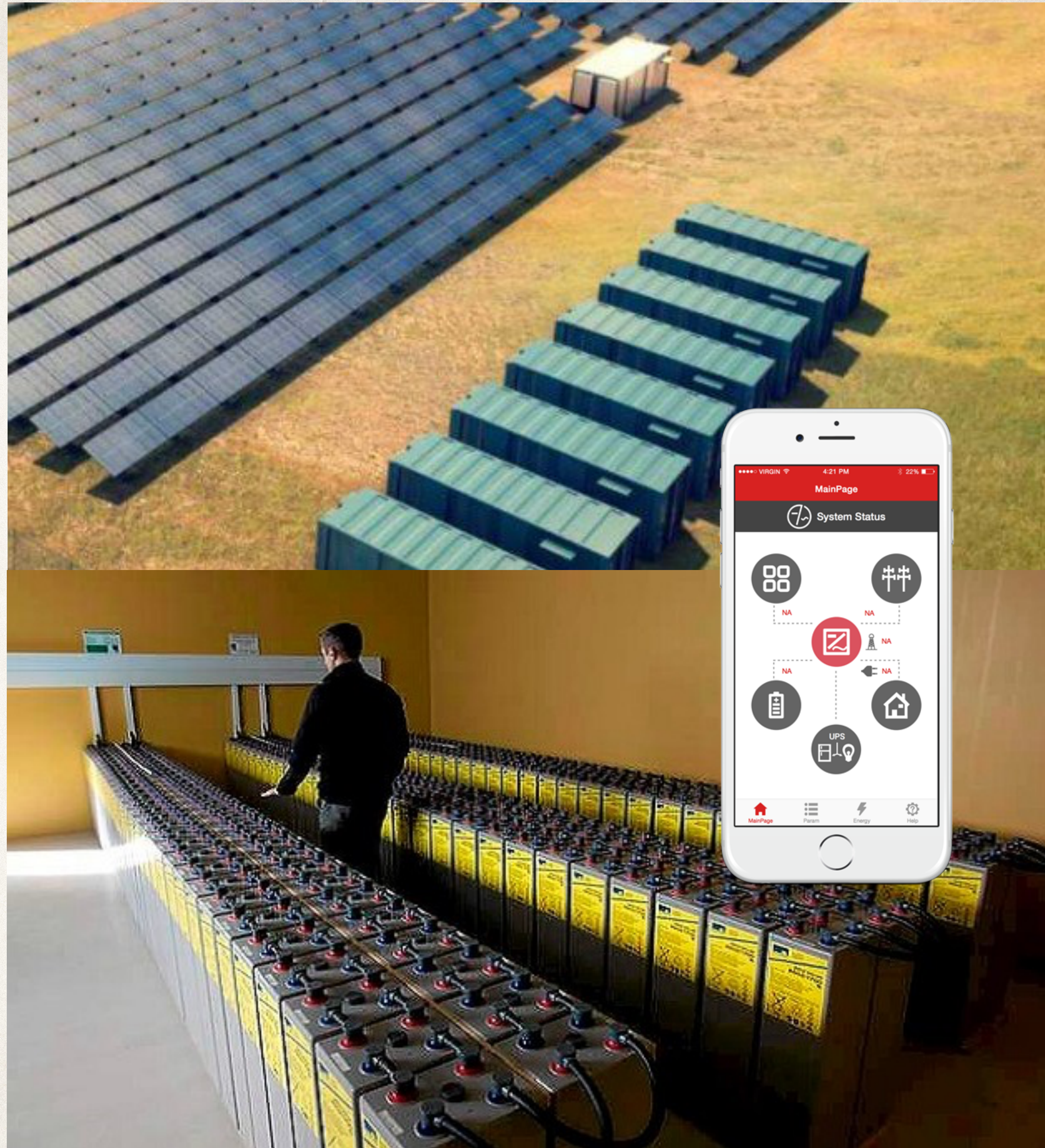
New Energy Landscape

- Increasingly electric
- Increasingly diverse
- Increasingly distributed
- Low carbon
- Increasingly seen as a 'controlled' cost



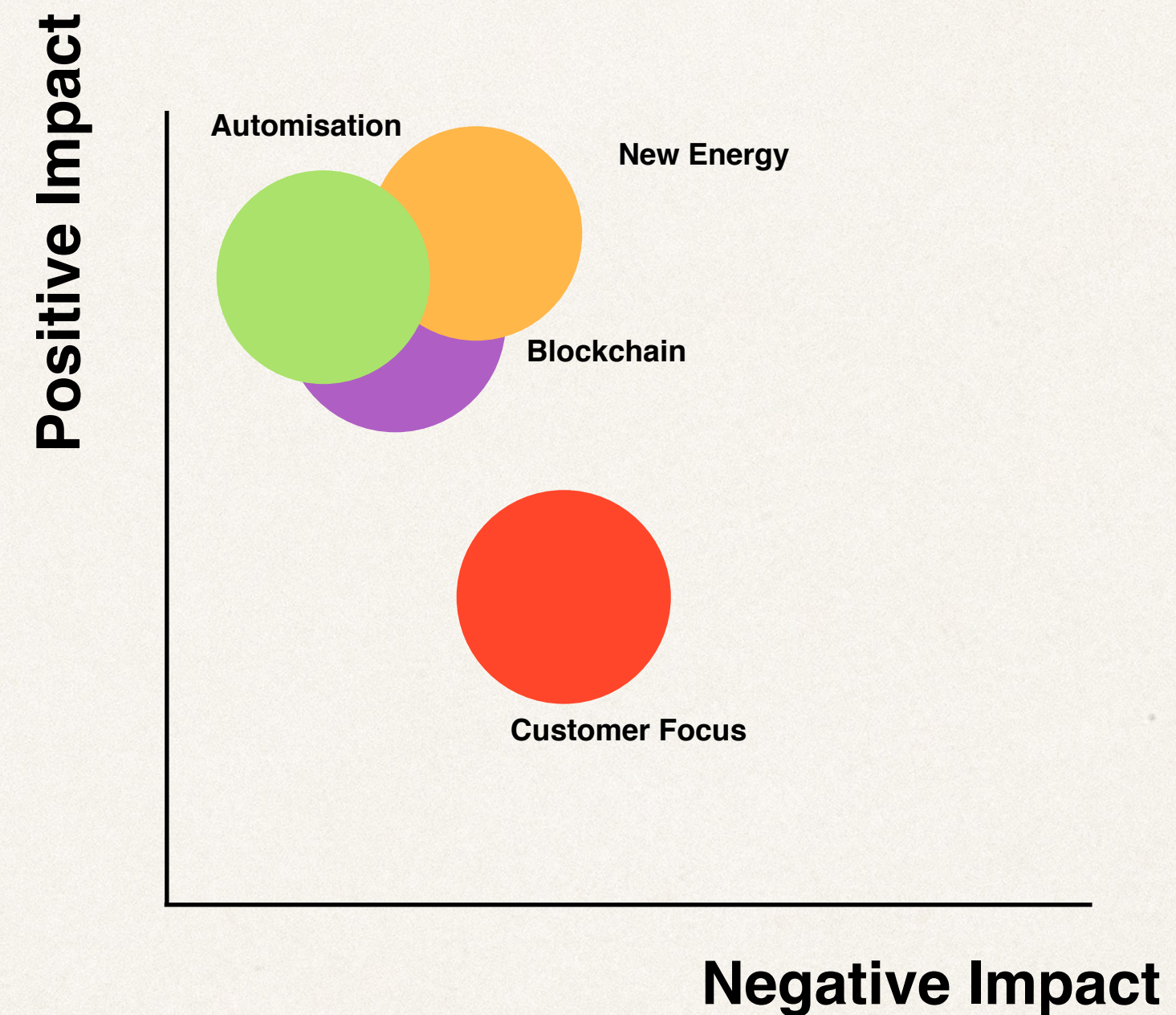
New Energy Landscape

- Energy assets increasingly part of IoT
- Assets break out of 'hub and spoke' model - a web without a centre
- Companies decide when and how they 'spend' their energy

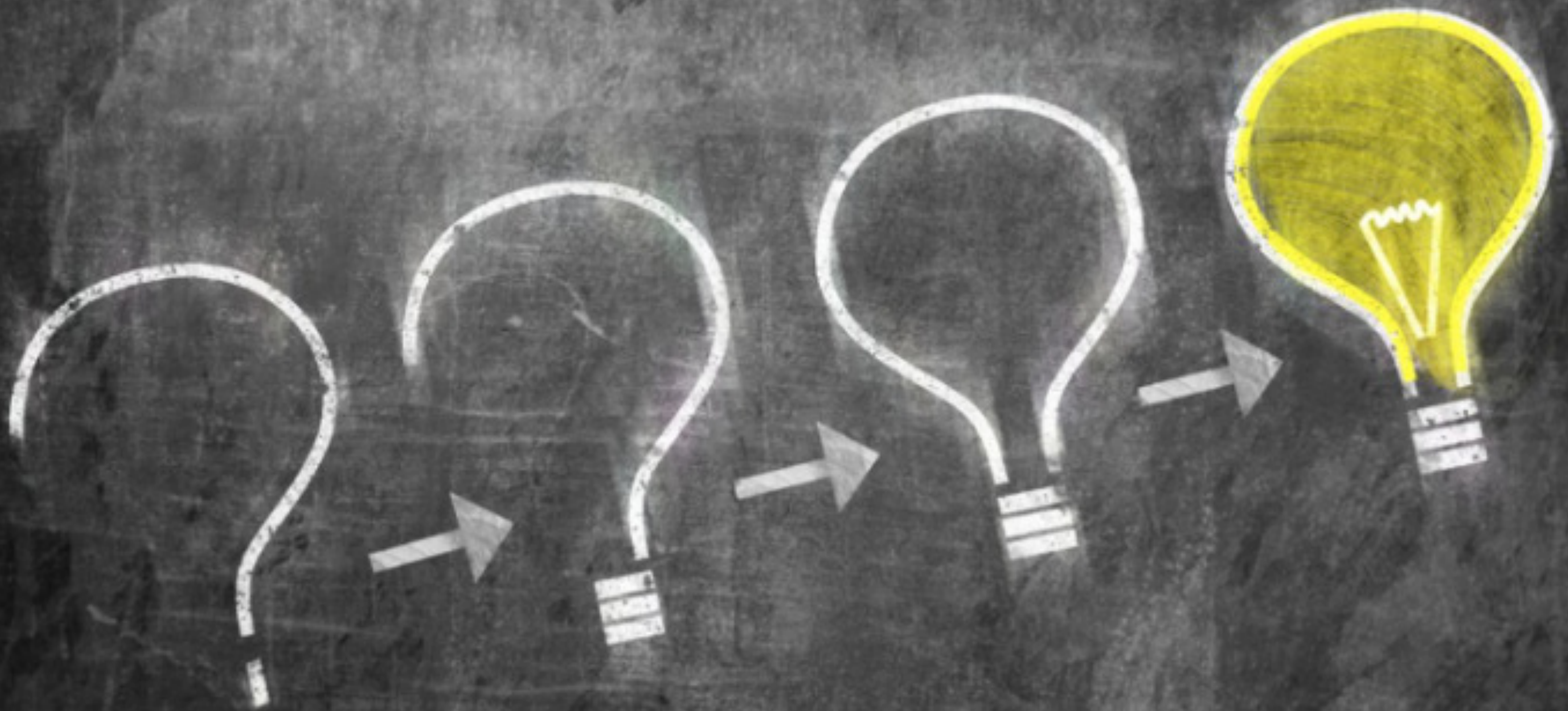


Productivity Impacts

- The Big 4 impact almost universally positively on productivity
- Bring together
 - Connected people
 - Connected devices
 - Digital processes and markets



Questions



Embrace, blockchain, new energy, automisation and customer focus.

Encourage all-of-government policy and regulation to connect people, devices, processes and markets.

Each delivers opportunities to become more productive.

Together they deliver the next productivity revolution.

