

# Mega Trends impacting the need for Social Innovation in Australia



F R O S T & S U L L I V A N

# Mega Trends \* and Social Innovation

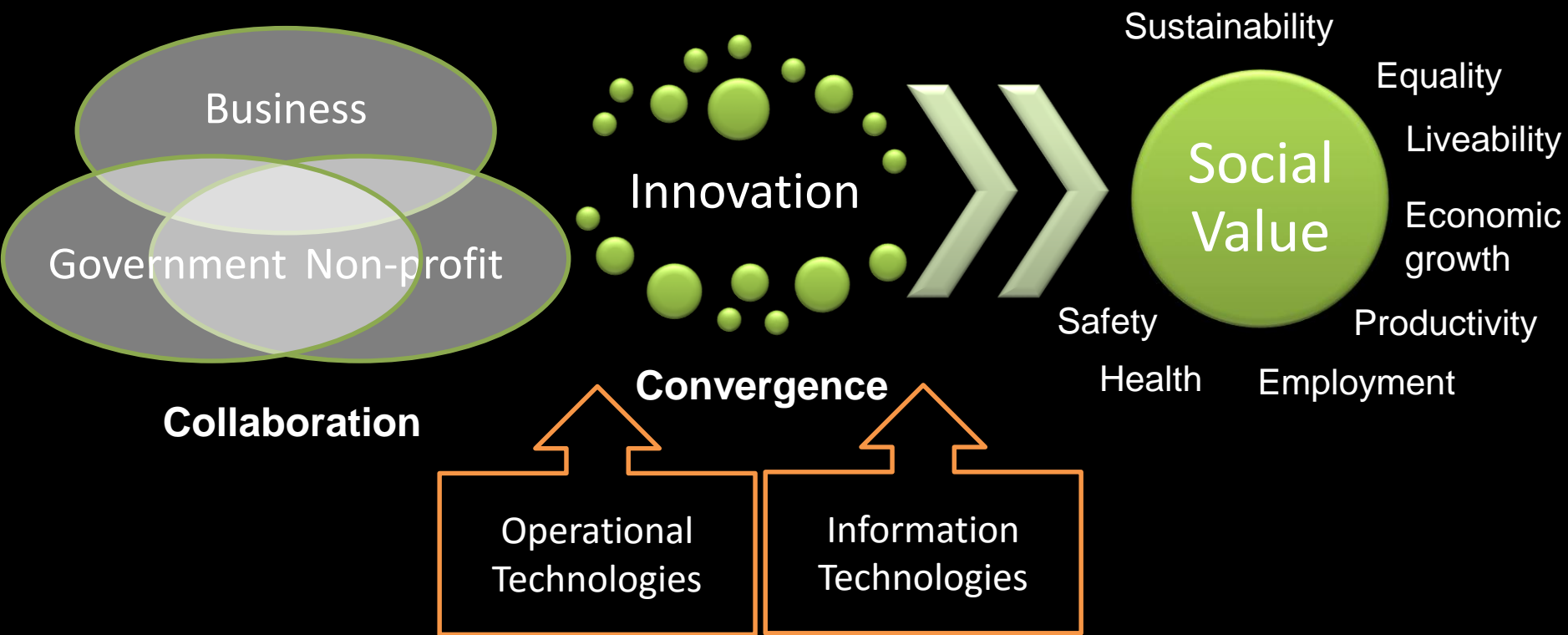


Source: Frost & Sullivan Analysis

*\*This list is not exhaustive*

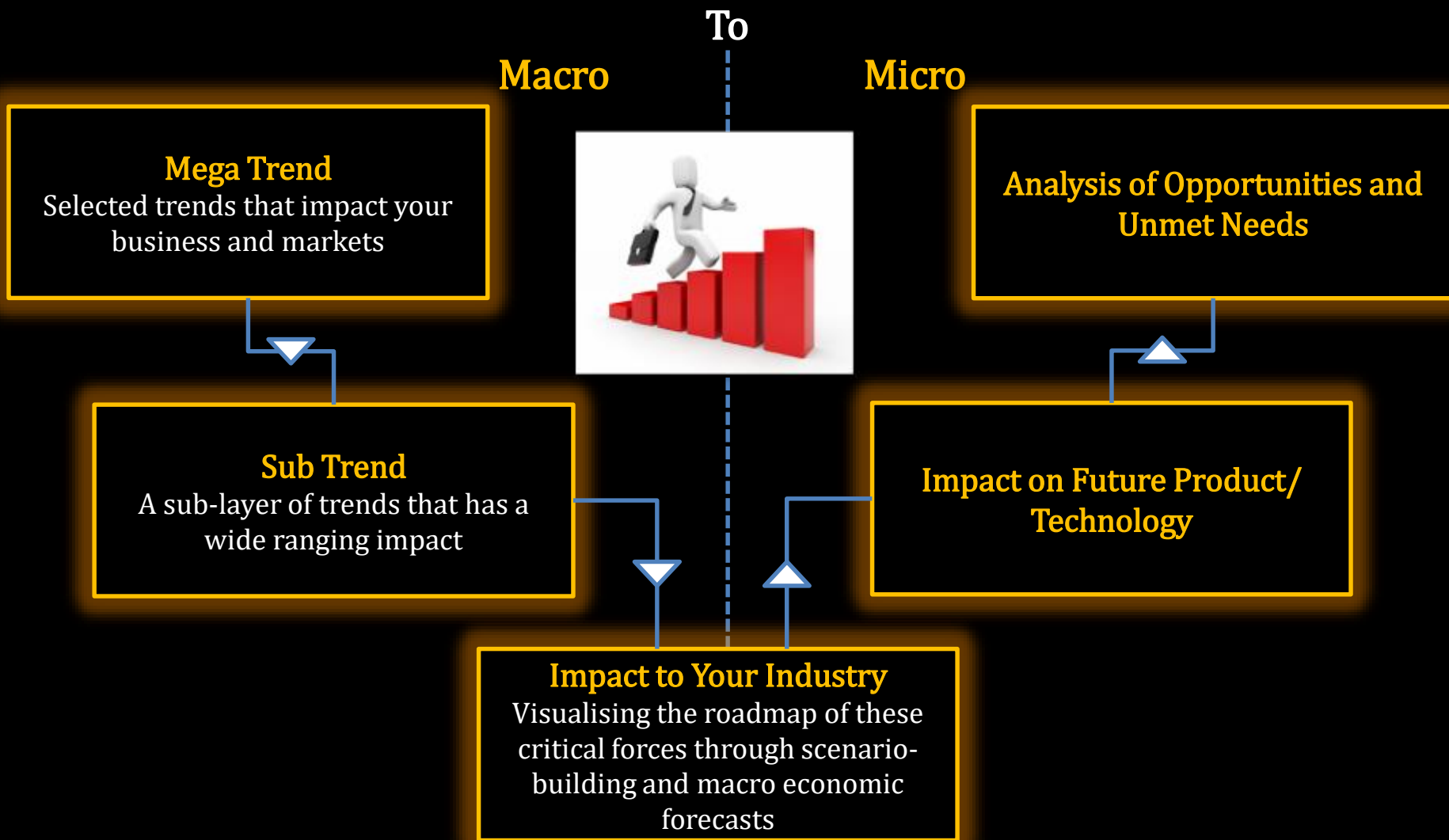
# Mega Trends and Social Innovation

Mega Trends – Opportunities and Challenges



Source: Frost & Sullivan Analysis

# From Macro to Micro: Taking Mega Trends from Information to Strategy Implementation



Source: Frost & Sullivan Analysis

# Connectivity & Convergence



# 80 Billion Connected Devices By 2020

10 Connected Devices for Every Household by 2020

5 connected devices for every user by 2020

5 billion internet users by 2020

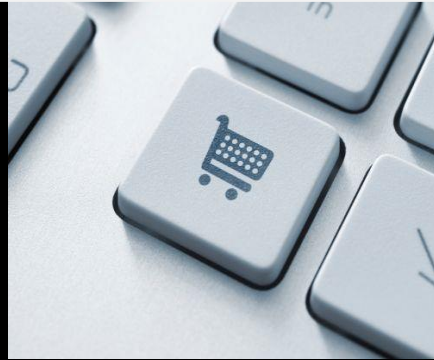
500 devices with unique digital IDs (Internet of things) per square kilometre by 2020



# Connectivity & Convergence – The Social Innovation Opportunity in Australia



93% of Australian adults use the Internet or own a smartphone



Over \$10 billion in retail e-commerce sales in Australia in 2015



69% of Australians active on social media



Australian Internet of Things (IoT) in the Home market over A\$1 billion by 2020

**Australia ranked 16th out of 143 countries in World Economic Forum's Networked Readiness Index**



**Driverless trucks  
Driverless trains  
Automated drilling rigs  
Advanced condition monitoring  
Remote operations centres**

**Real time data gathering & analytics  
Integrated systems  
Smart PPE**



Source: Sensis, PewResearchCenter, eMarketer, WEF, Frost & Sullivan Analysis

# Smart is the New Green





# Global Smart Cities

Over 26 Global Cities to be Truly SMART Cities in 2025 - More than 50% of Smart cities of 2025 will be from Europe and North America



Selected Smart Cities in 2025

Source: Forbes Smart City List, Innovation City Index, Specific Smart Project Websites for Each City, Frost & Sullivan

# Smart is the new Green – The Social Innovation Opportunity in Australia



- In Australia, urban population as a percentage of total is amongst the highest globally (~90%).
- Populations in state and territory capital cities projected to more than double from 2011 to 2061.

**Buildings account for almost one quarter of Australia's emissions.**



**Prefab  
Shell efficiency  
Building Energy Management Systems  
Smart grids  
Smart lighting  
Solar PV & Battery Storage**

**High performing buildings can deliver almost \$20 billion in financial savings by 2030; apart from quality of life and productivity improvements**

Source: ABS, ASBEC, ClimateWorks, Frost & Sullivan Analysis

# Innovating to Zero



# Examples of Innovating to Zero at Work



**Zero Papers** (Paperless Meeting rooms using Haptics/Multi-touch)



**Zero Emissions, Zero Energy Losses**



**Zero Accidents** (Zero Occupational Hazards)



**Zero Time to Business Incubation**



**Zero Delays** in Delivery



**Zero Client Complaints**

Source: Frost & Sullivan Analysis

# Innovating to Zero – The Social Innovation Opportunity in Australia



- 'Zero coal' scenario in South Australia – opportunities and challenges
- From now to 2030, cumulative abatement potential of over 12 MtCO<sub>2</sub>-e can arise from optimising Australian building performance using data management systems
- Commercial Building Disclosure energy efficiency scheme – mandatory disclosure threshold lowered from 2,000 sqm to 1,000 sqm

**Integrated Solar PV & Battery to reach 3.8 GW installed capacity in 20 years**

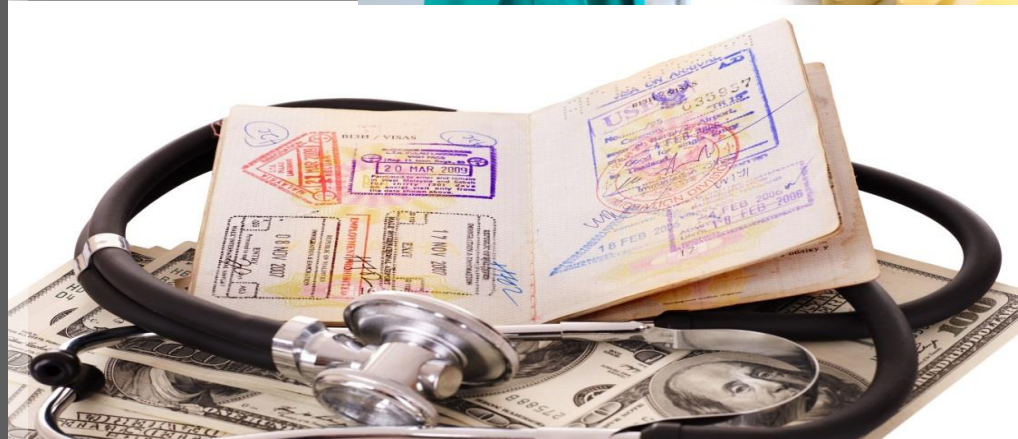


- 5 new wind farms and 8 >1 MW solar farms completed in 2015
- Rooftop solar power passed a total of 5 GW capacity in early 2016
- Cost of large-scale solar power in Australia has declined from \$200/MWh (2013) to less than \$130/MWh today

Renewable energy accounted for 14.6% of Australia's electricity in 2015

Source: AEMO, ARENA, Energetics, Department of the Environment, SafeWork Australia, Frost & Sullivan Analysis

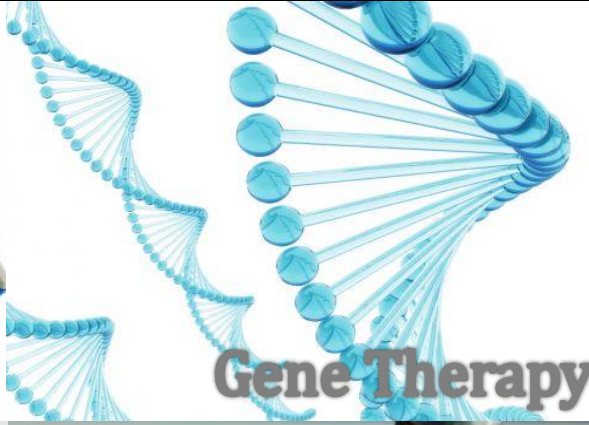
# Health, Wellness and Wellbeing



# Future of Health, Wellness and Wellbeing



**E-Health/M-Health**



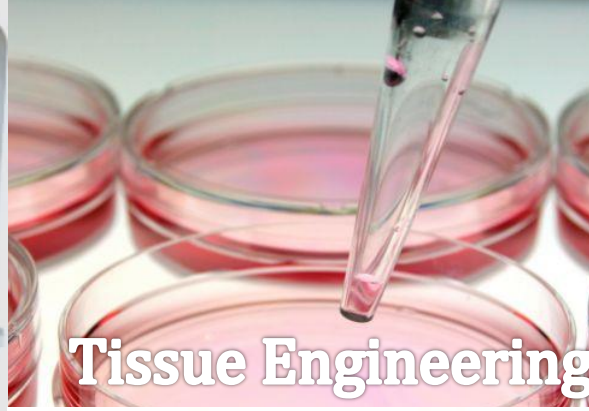
**Gene Therapy**



**Wonder Drugs**



**Health Kiosks**



**Tissue Engineering**



**Nutraceuticals**



**Healthcare Tourism**



**Cybernetics**



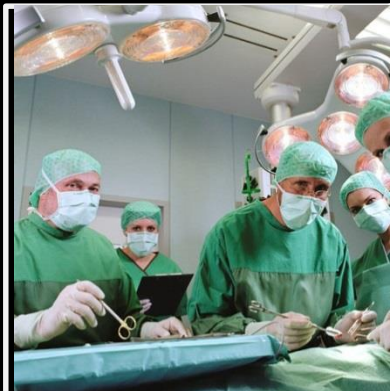
**Non-Invasive Surgery**

# Health, Wellness & Wellbeing – The Social Innovation Opportunity in Australia



- Population 65 years and over to increase from 14% (2012) to 22% (2061).
- Half of all Australians suffer from a chronic disease. ~20% affected by at least two.
- 90% of Australians willing to share their de-identified health data to advance medical research and improve patient care.

**Australia's first large-scale trial of telehealth shows that it could save up to \$3 billion a year for the nation's healthcare system.**



Patient Admission and Prediction Tool (PAPT) developed by Australian eHealth Research Centre, Queensland Health, Griffith University and Queensland University of Technology, now used by over 30 hospitals in Queensland, with a 90% accuracy in forecasting bed demand (through analysis of hospitals' historical data).

Reduced wait times, improved care, more efficient bed management, staff resourcing and surgery scheduling.

Source: ABS, AIHW, CSIRO, Research Australia, Frost & Sullivan Analysis



# The Future of Mobility



# Social Innovation in Mobility – The Value at Stake

Estimated Value of Intelligent Mobility Infrastructure Market (IT Solutions)

**\$58 Billion**

+

Estimated Value in Savings

**\$497 Billion**

\$50 billion savings in avoiding accidents

25%

Reduced value of damage

\$294 billion Savings in congestion cost

20%

Reduction in congestion value

\$17 billion savings in emissions

10%

Reduction in Emissions

\$4 billion savings in commutation time

25%

Reduced commuting time

\$132 billion savings in commutation time

10%

Reduction Fuel Consumption

**= \$555 Billion value at stake**

# The Future of Mobility – The Social Innovation Opportunity in Australia



- Passenger travel in Australian cities grown almost ten-fold over last 70 years
- In Australia's capital cities, the avoidable social cost of congestion ~A\$16.5 billion in 2015. To rise in a 'business-as-usual' scenario to A\$30 billion by 2030.
- A quarter of Australian commuters travel for 45 minutes or more one way to work.

**Road and rail freight task projected to increase by 86% by 2031.**



- Cooperative Intelligent Transport Initiative (CITI) Illawarra, NSW and Melbourne, Vic
- Collision Avoidance trial for O-Bahn buses, Adelaide, SA
- Freight Vehicle Priority Trial, Sydney, NSW
- Addinsight – Smartphone App and Incident Detection System, SA

Safer, more efficient and environmentally sustainable transport

Source: BITRE, ITS Australia, Frost & Sullivan Analysis

