

# Sustainability

## What it means for our cities

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# Cities are the engine room of economies

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“Infrastructure Australia’s view is that major cities are more critical than ever before to Australia’s future prosperity. Coordinated action is required to secure productivity, sustainability and quality of life”

*Infrastructure Australia 2008*



# Most people live in cities

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- 10% people lived in cities in 1900
- 50% people lived in cities in 2000
- 75% people will live in cities in 2050

*Urban Age Project 2006*



# Social Prosperity

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“The wealth generated by cities flows from their innate urbanity, not from the mere aggregation of economic activity in certain places. This productive urbanity derives from the capacity of urban structures to supply opportunities for social and economic advancement that cannot be offered outside cities (ie: the efficient concentration and connection of educational, industrial, commercial and recreational opportunities)”

*Property Council of Australia 2002*



# Productivity

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“National policy is needed to manage the role of our cities in globalisation. We must manage cities in the national interest and ensure that the fruit of their productivity is redistributed to less economically potent regions”

*Brendon Gleeson, Griffith University 2008*

“Sydney, for example, is a vastly important national asset. As a second-tier global city it generates a large share of national income and many positive externalities for the nation”

*Property Council of Australia 2002*



# Environment

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- Australia's cities urgently need a vast environmental renovation if they are to be made sustainable. This task of ecological renovation can align with many pressing social imperatives in our urban regions

*McManus 2005*



# What drives city development?

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- Population & demographics
- Technology change
- Markets for factor inputs



# World Cities

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	2007	2025
Tokyo	35.7	36.4
New York	19.0	20.6
Mexico City	19.0	21.0
Mumbai	19.0	26.4
Sao Paulo	18.8	21.4
Delhi	15.9	22.5
Shanghai	15.0	19.4
Kolkata	14.8	20.6
Dhaka	13.9	22.0

- The 10 fastest growing megacities are all in Asia
- Old world cities have stalled (London, Paris, Moscow, etc)
- New 'tiger' cities have also slowed (Osaka, Seoul, etc)

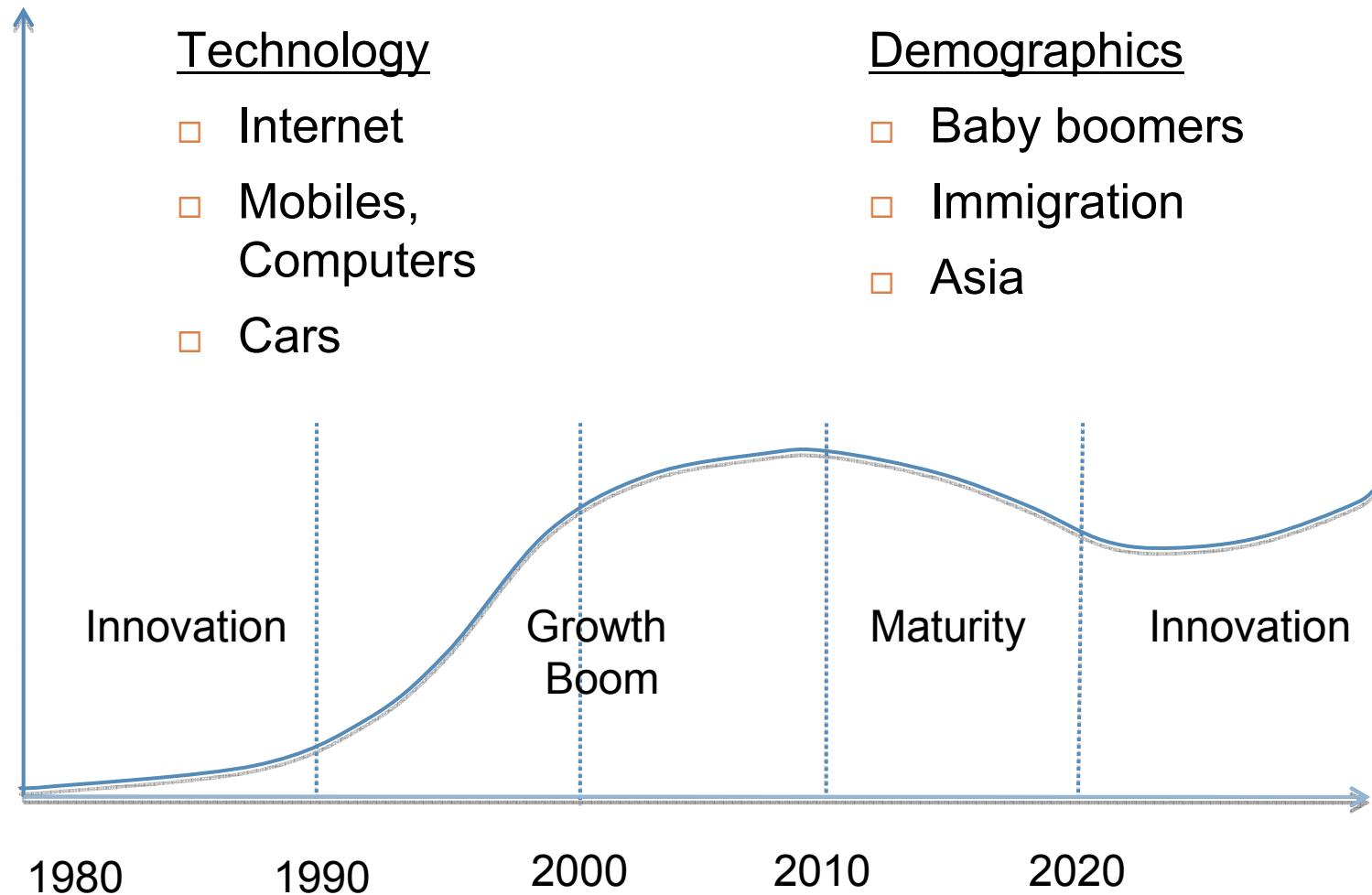
*World Bank, 2008*





# Economies run on deep cycles

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# Markets run on expectations

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- Cities sprawl because land is cheap on the fringe
- Labour moves to where the jobs are
- Capital is global
- Innovation & entrepreneurship go where they are welcomed



# .... and emotions – greed and fear

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“The market can stay irrational longer than you can stay solvent”

*John Maynard Keynes*



# From abundance to scarcity

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- Food
- Water
- Transport
- Energy
- Finance



# Food

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- Access to protein will shape cities in future
- Protein comes from beef, pork, chicken
- Most feed for livestock comes from fishmeal
- Fishmeal is nearly gone!

Food Conversion Ratio	
Beef	12:1
Pork	8:1
Chicken	6:1
Fish	1:1

*World Food Organisation, 2007*

*Critical for cities: secure local food production  
close to population using renewable inputs  
(aquaculture, grains.)*



# Water

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- Most drinking water goes on lower order uses
- Reuse, recycle, repurpose
- Innovation in decentralised capture, storage and use of water will reshape cities

*Critical for cities: Diversification of water sources, improved reuse across all user types and zero liquids discharge from industrial estates*

# Energy

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- Fossil fuels for power generation in decline
- Decentralised power generation from renewables is rising – but peak load capacity is weak
- We need better portable storage (eg: nanobatteries vs NiMeHi) and fixed storage (vanadium flow batteries)

*Critical for cities: power storage innovation has lagged (car companies?) and new efficient technologies are needed*



# Transport

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- Urban sprawl has separated people from city amenities and jobs (particularly smart jobs)
- Car use has grown based on cheap fuel
- Public transit systems work best serving dense urban agglomerations

*Critical for cities: private transport based on renewable energy and public transport serving dense, diverse activity centres*





# Finance

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- World finance system is badly broken
- Globalisation and 'innovation' separated sources and application of funds too much
- Regulation must tighten, but only to improve transparency and information flows
- Bubbles are good for the economy of cities in the long run because they fund innovation

