

The Future by Numbers

sustainablefuture.info

Numbers

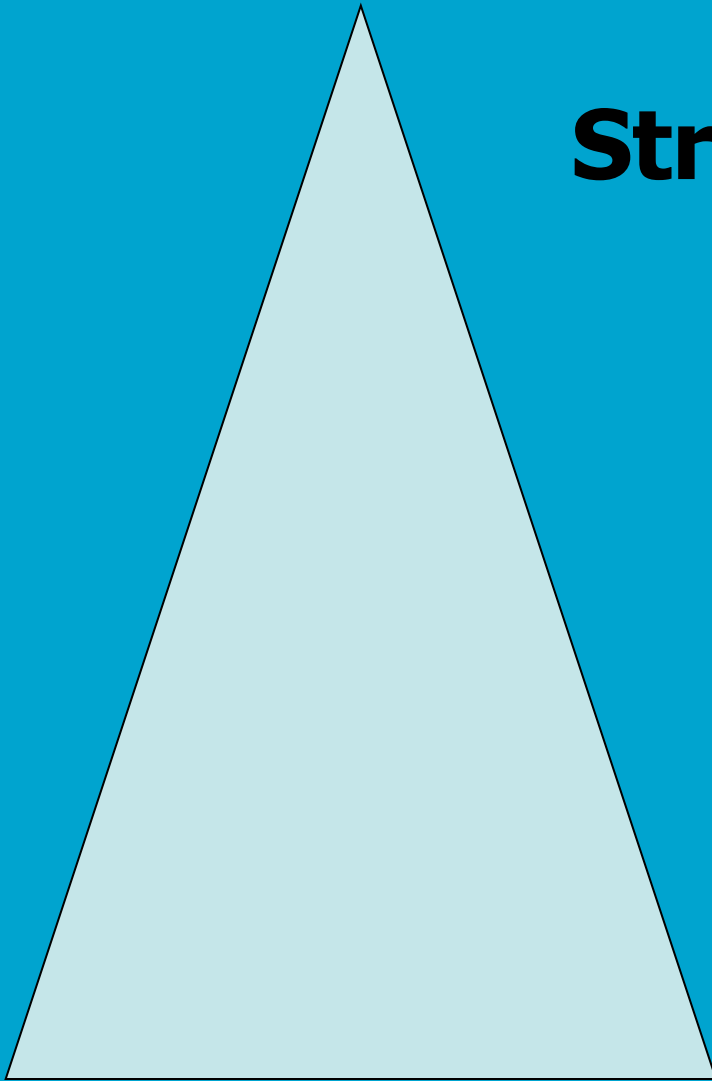
a thousand in a pinch

a million in a cup

a billion in a bathtub

a trillion in a classroom





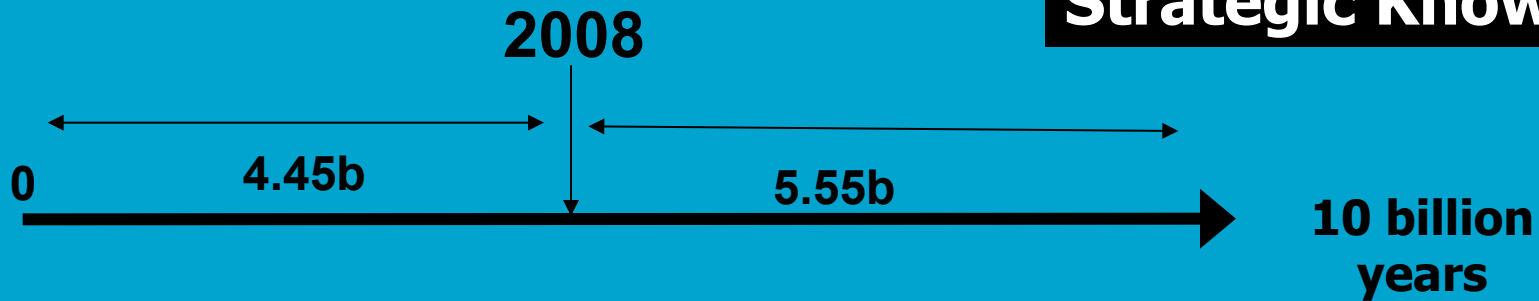
Strategic Knowledge



Information



Data



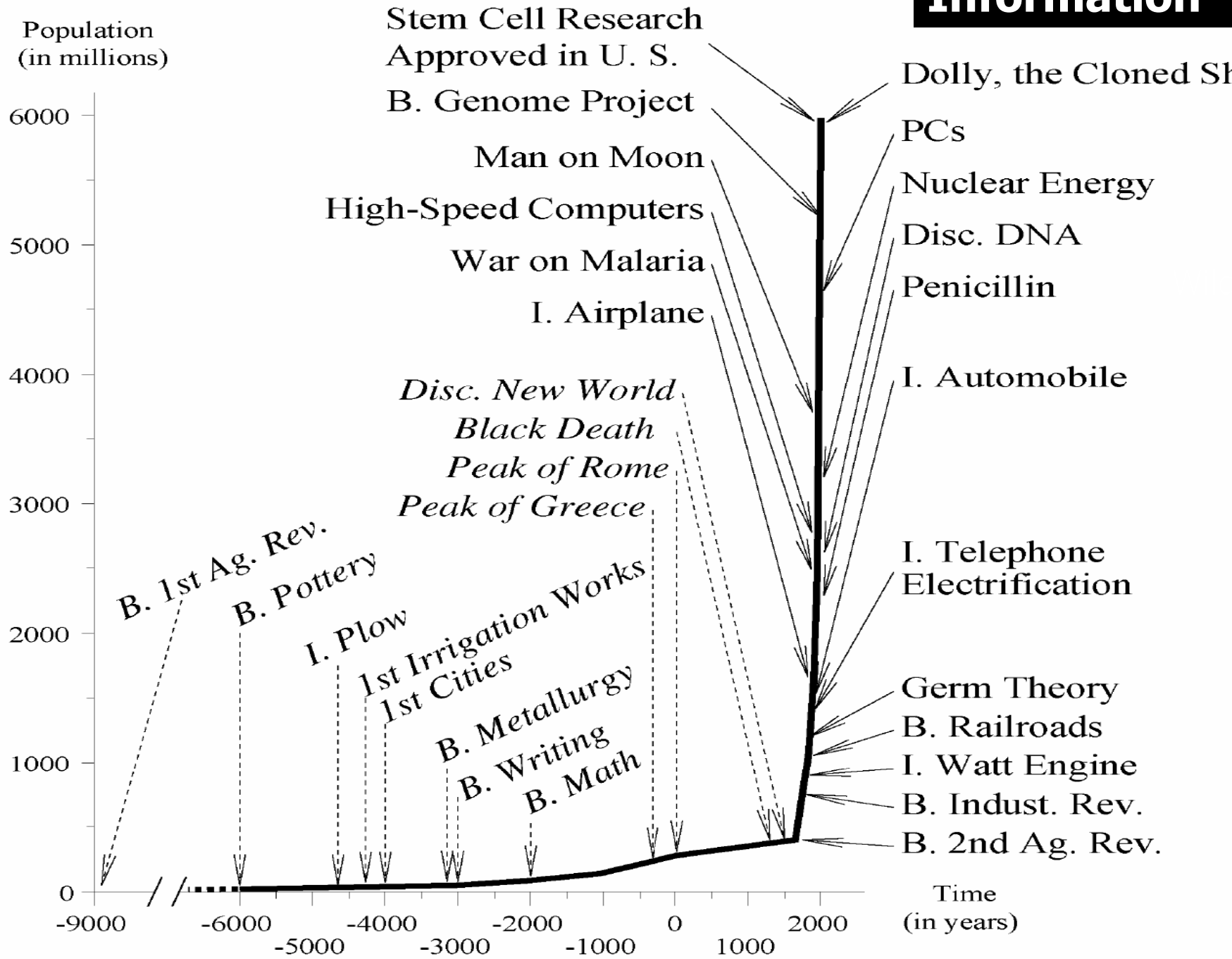
Two million years ago, evolution tells us...

Be like the *habilis* - the archetypal jack-of-all-trades, inquisitive scavengers prepared to try almost anything to survive. Be tough, active, gregarious and noisy, always on the move and always alert to the possibility of a ...meal.

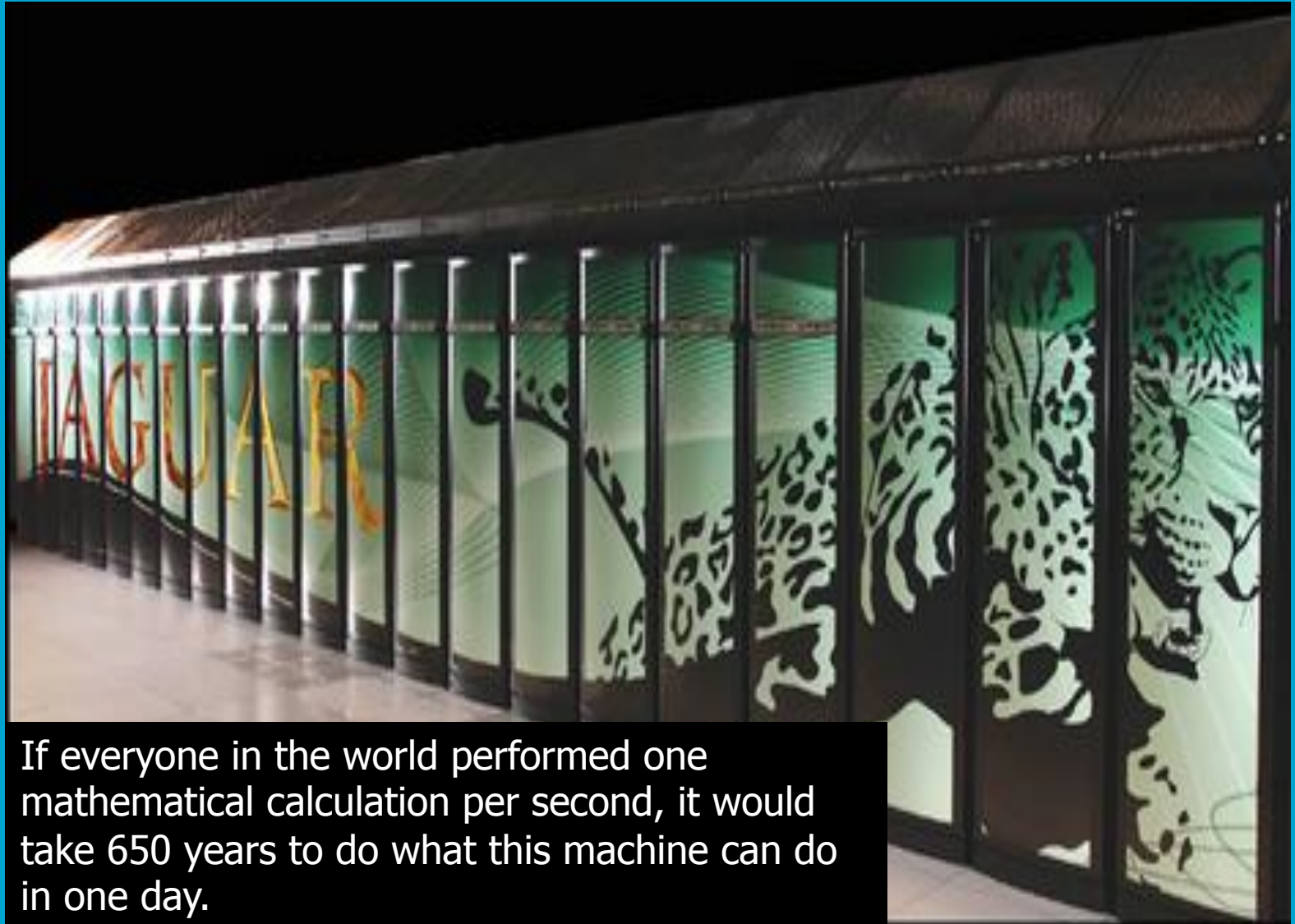
Don't be like the *boisei* – whose behaviour was specialised for survival in only one niche, they didn't make it. They live within a strict social structure and are led by a dominant male whose strength and power holds the group together.

The *boisei*'s specialisation has locked them into one way of living, and when their niche no longer exists, neither can they. But the *habilis* can adapt to a changing world - their generalist trait lives on in us.

Information



The US Department of Energy's Oak Ridge National Laboratory Computer can crunch a 'quadrillion' calculations per second



If everyone in the world performed one mathematical calculation per second, it would take 650 years to do what this machine can do in one day.



**Joseph Coates,
Professional Futurist,
New York**



**Jerome C. Glenn – Director, The Millennium
Project and co-author of the
State of the Future, 2008**

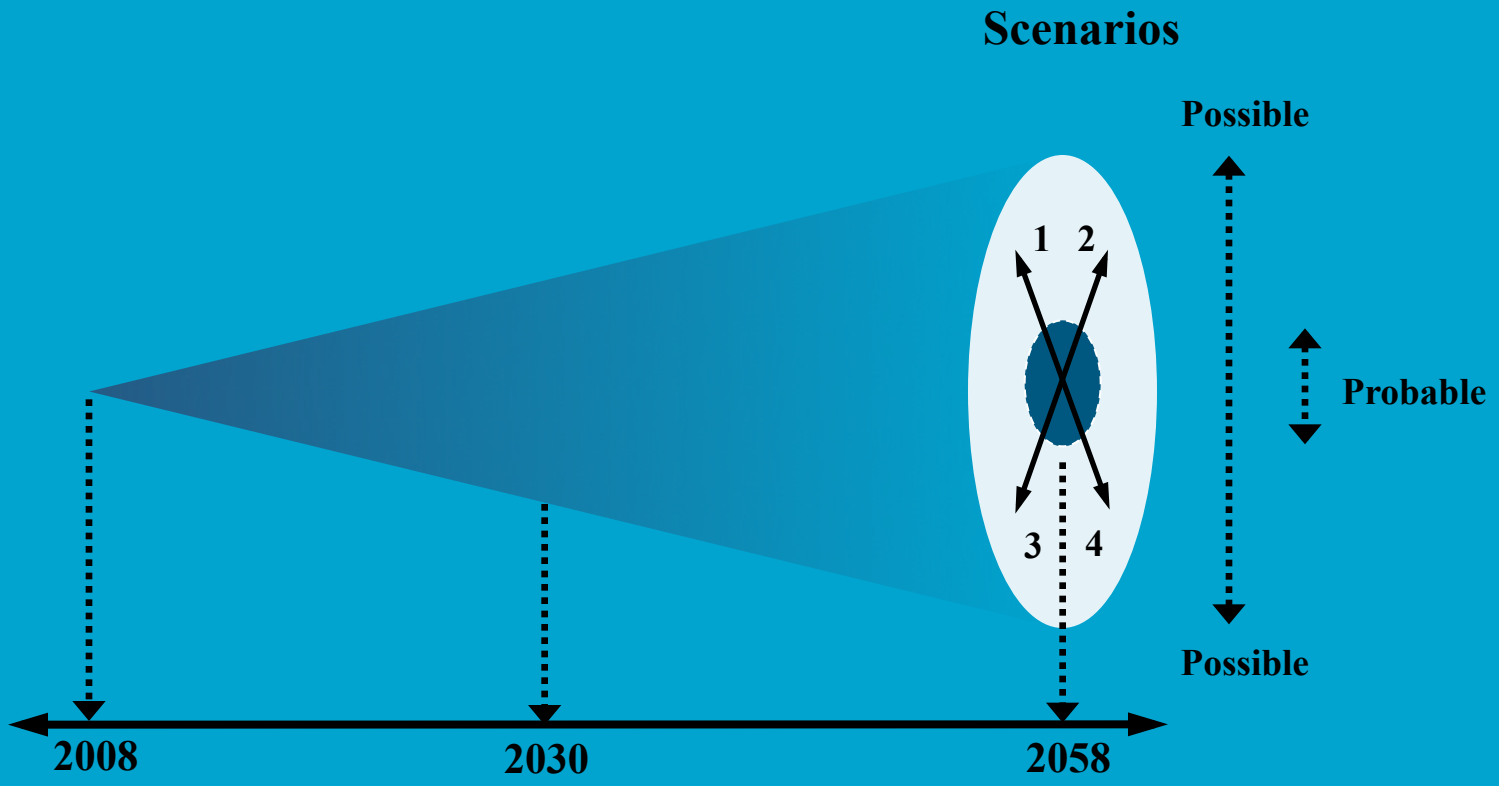
Futures Studies

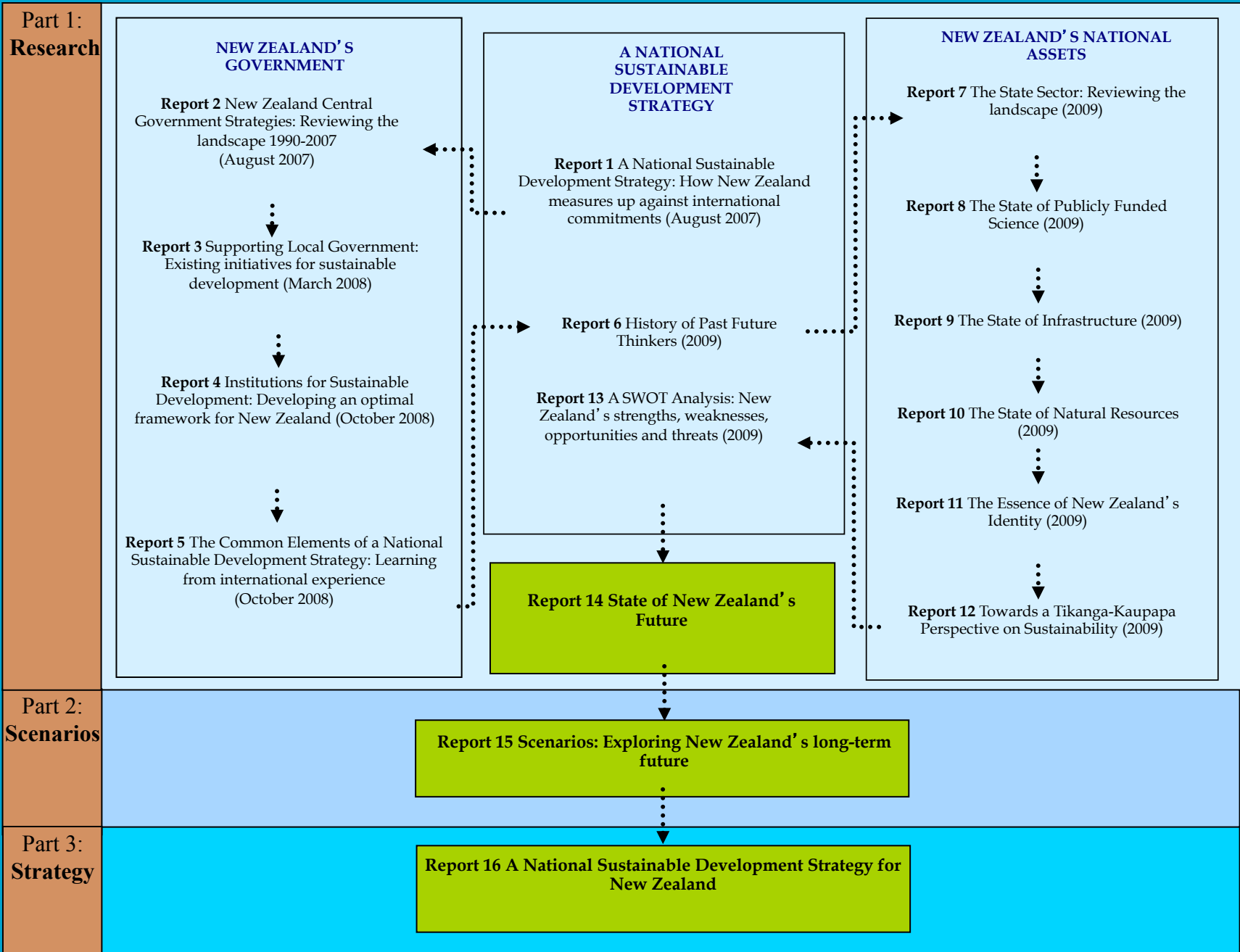
Probable futures: forecasting and sometimes prediction (Status Quo)

Possible futures: scenarios, risks
(Explorative)

Preferred futures: strategies and agendas for change, propelled by innovation and leadership (Visionary)

Project 2058





Change Agents

1. Climate
2. Demography
3. Ecosystems
4. Energy Production
5. Food & Water
6. Values & Beliefs
7. Justice & Freedom

Response to Change Agents

1. Management of Ecosystems & Resources
2. Infrastructure
3. Security & Terrorism
4. Technology
5. Governance & Institutions
6. Economic Risks
7. Information & Ideas

Wild Cards

Steps Towards Scenarios

- 1. Define** project parameters, trends, driving forces, assumptions
- 2. Explore** uncertainties and rank
- 3. Build** scenario worlds, write stories, test
- 4. Use** consider implications, review, communicate

Given the

- increase in population
- increase in per capita consumption
- climate change &
- the existence of wildcards

Wild Card 1

Technology

- Info
- Nano
- Bio

Wild Card 2

Terrorism & War

- Crime
- War
- Nuclear War

Wild Card 3

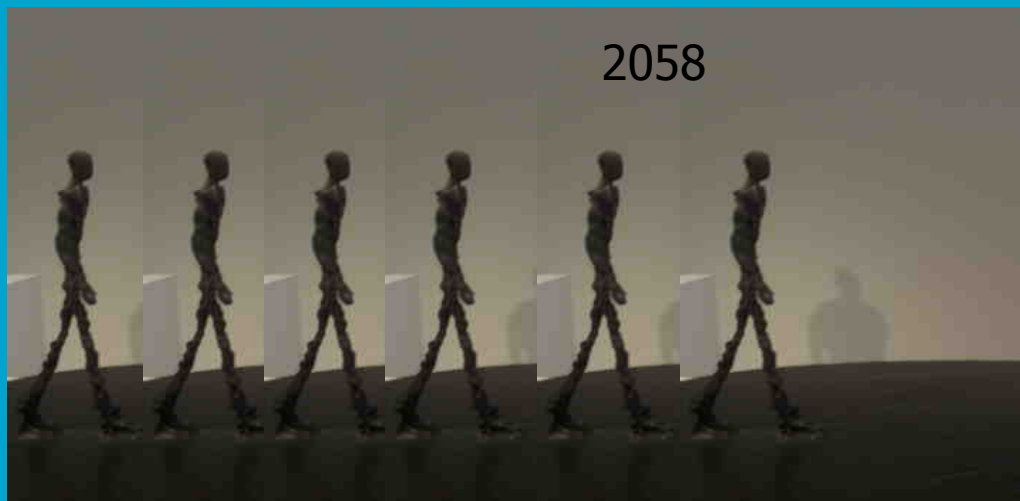


Health & Safety

- Antibiotic R.
- Pandemic
- Food
- Water

**In 2008, 3 billion
make \$2 or less
per day.**

**In 2058, it may be
6 billion.**



Crime is now global

- **\$1 trillion pa Illicit Trade**
- **150 unauthorised use of nuclear or radioactive materials in the last 4 years**
- **20,000 active nuclear weapons**





Our generation is likely to have a life expectancy of 92 – 100 years of age.

Our children, if we fail to manage their weight gain, will have 80 year old bodies in 50 year old skin.

Immigration and Works Scheme 1870

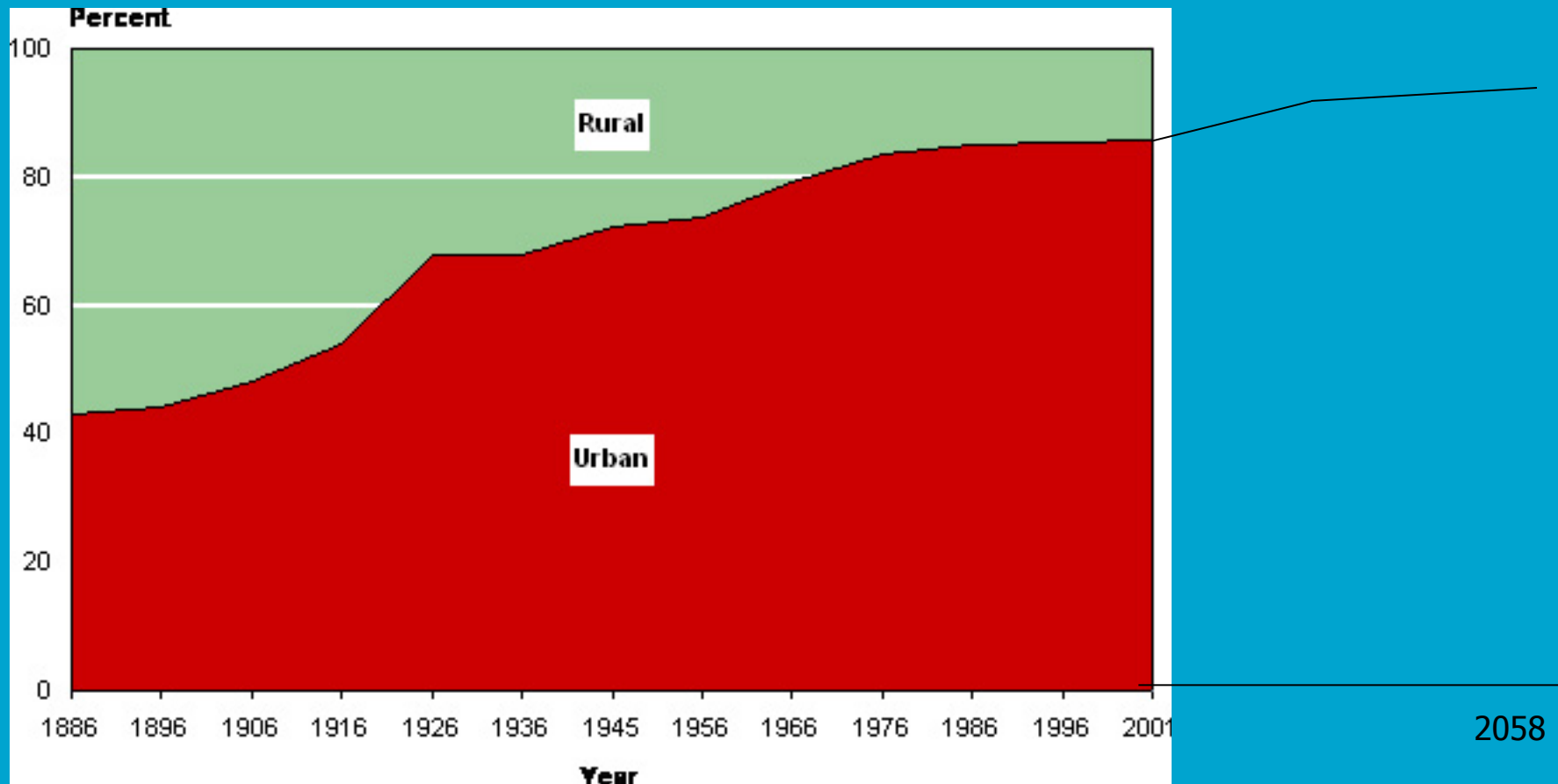


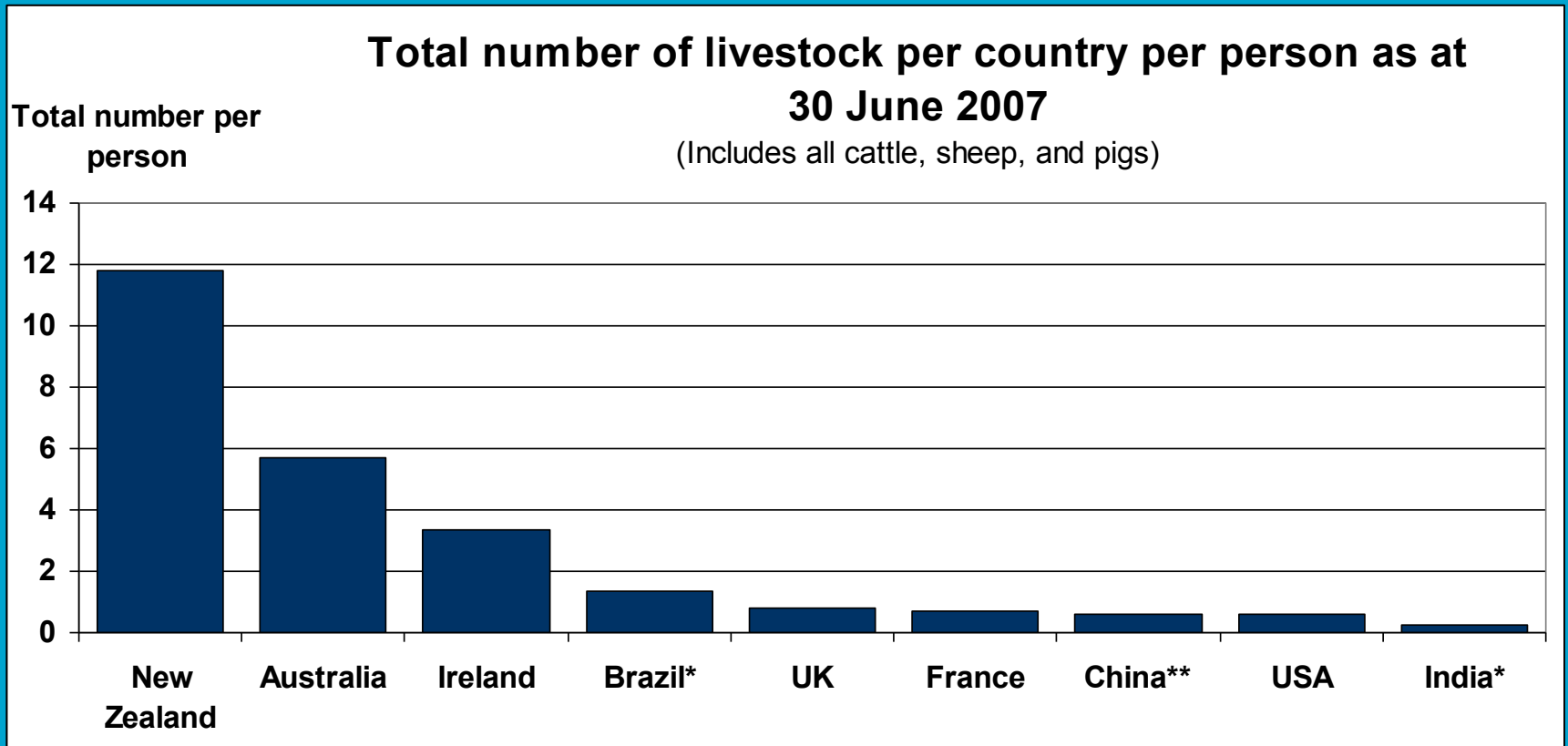
Julius Vogel (1835-1899)

A development plan designed to revive the economy and provide the pre-conditions of economic growth, included roads in the North, railways in the South ...“do more to put an end to hostilities and to confirm peaceful relations, than an army of ten thousand men’...

“We considered it very desirable, in a young country, that wealth should not be in the hands of a few capitalists...[who]...would leave the country, and enjoy elsewhere the wealth so accumulated.”

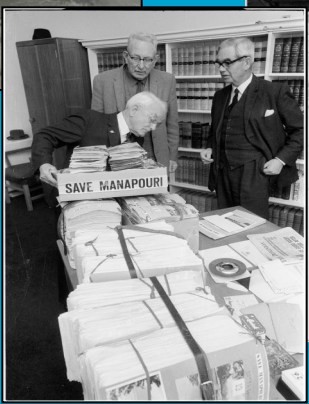
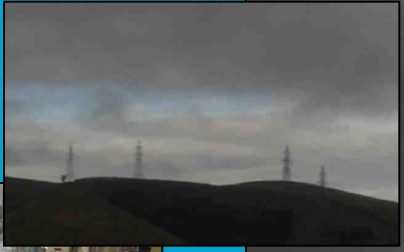
New Zealand Rural Urban Population Mix





NZ

**Is this
a good
deal in
1908?
1958?
2008?
2058?**



WATER

Litres per capita per day

NEW YORK CITY
500



MEXICO CITY
360



SHANGHAI
1,860



JOHANNESBURG
380



WELLINGTON
400



LONDON
160



BERLIN
160



Source: The Urban Age Project, 2008

TRAVEL

Average cost of public transport ticket in US\$

NEW YORK CITY
2.0



MEXICO CITY
0.2

-

SHANGHAI
0.5



JOHANNESBURG
1.2



WELLINGTON
2.8



LONDON
2.7



BERLIN
2.5



ENERGY

kWh per capita per annum

NEW YORK CITY
63,000

MEXICO CITY
1,800



SHANGHAI
5,600

JOHANNESBURG
5,600

WELLINGTON
7,800



LONDON
20,500

BERLIN
21,600



Source: The Urban Age Project, 2008

**New Zealand
needs a
'National Strategy'
to optimise our future,
to align our industry,
to reinforce our national brand and
to be an example of what is
possible**

**- not because we have to, but
because we want what it can
deliver**

Thank You

Sustainablefuture.info