



Mitchell Community Vision 2040
Think-Tank
25 March 2019

future→iQ

Create Future Intelligence™

www.future-iq.com

Future iQ Project Team

future→iQ®
Create Future Intelligence®



David Beurle
Founder and CEO



Heather Branigin
Vice President,
Foresight Research



Celine Beurle
COO & Managing
Director, Future iQ Europe

Additional Team Members: Tobiloba Adaramati
Walter Paixao-Cortes

The challenge for today...

Explore the future

Ask the hard questions

Think creatively

**The outcome will be a new view of the future and
consideration of the implications for the future
of the City of Mitchell.**





future→iQ

Forces impacting
the world (and
regions)

What are the
emerging macro
drivers...

Macro Trends and Forces of Change Related to . . .

- **Demographics, population and mass urbanization**
- **Changing macro economics and societal values**
- **Energy, food, water & changing climate**
- **Technology, and the next industrial revolution**





Demographics, population and mass urbanization

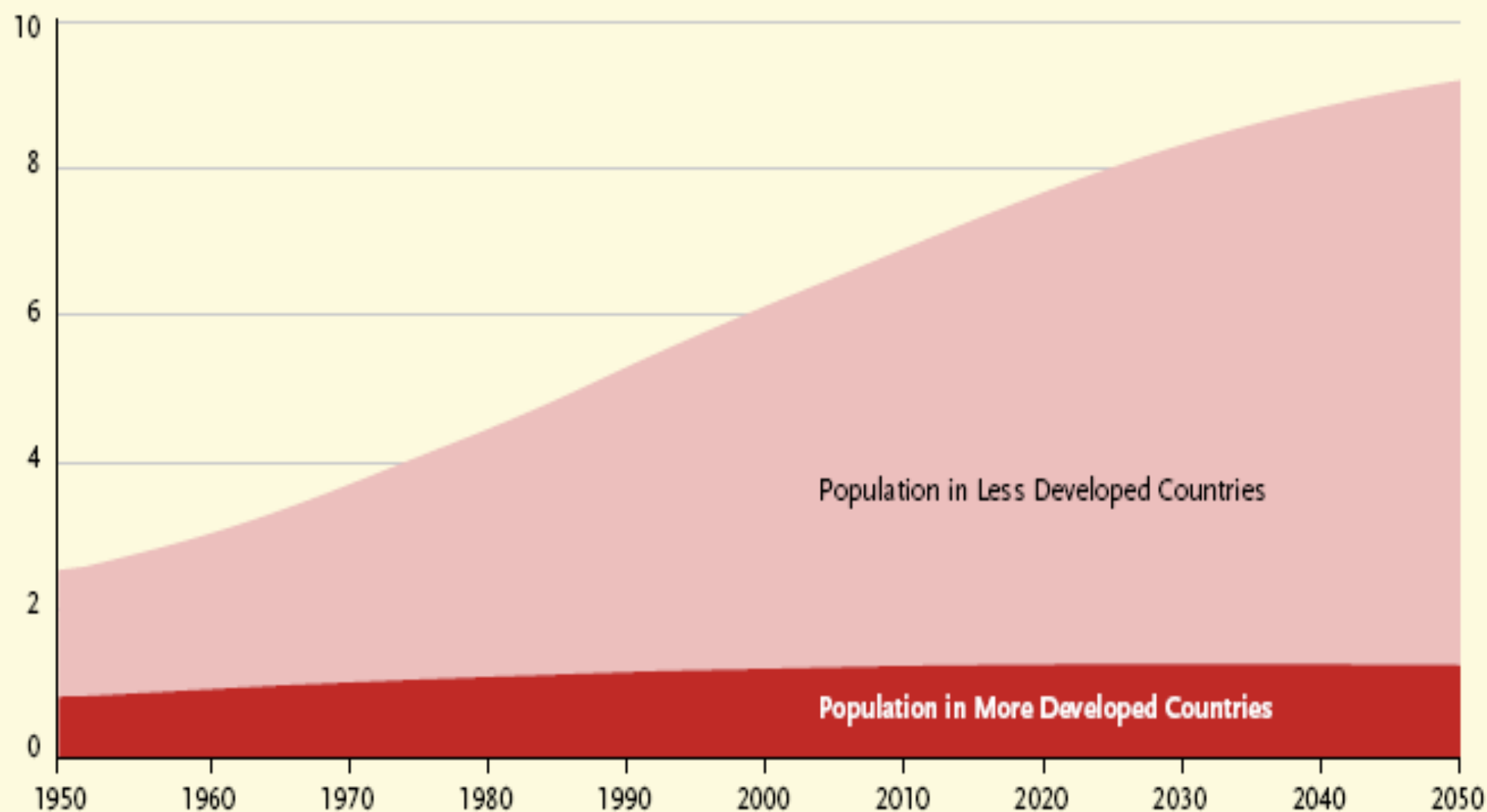
future→iQ

Create Future Intelligence™

www.future-iq.com

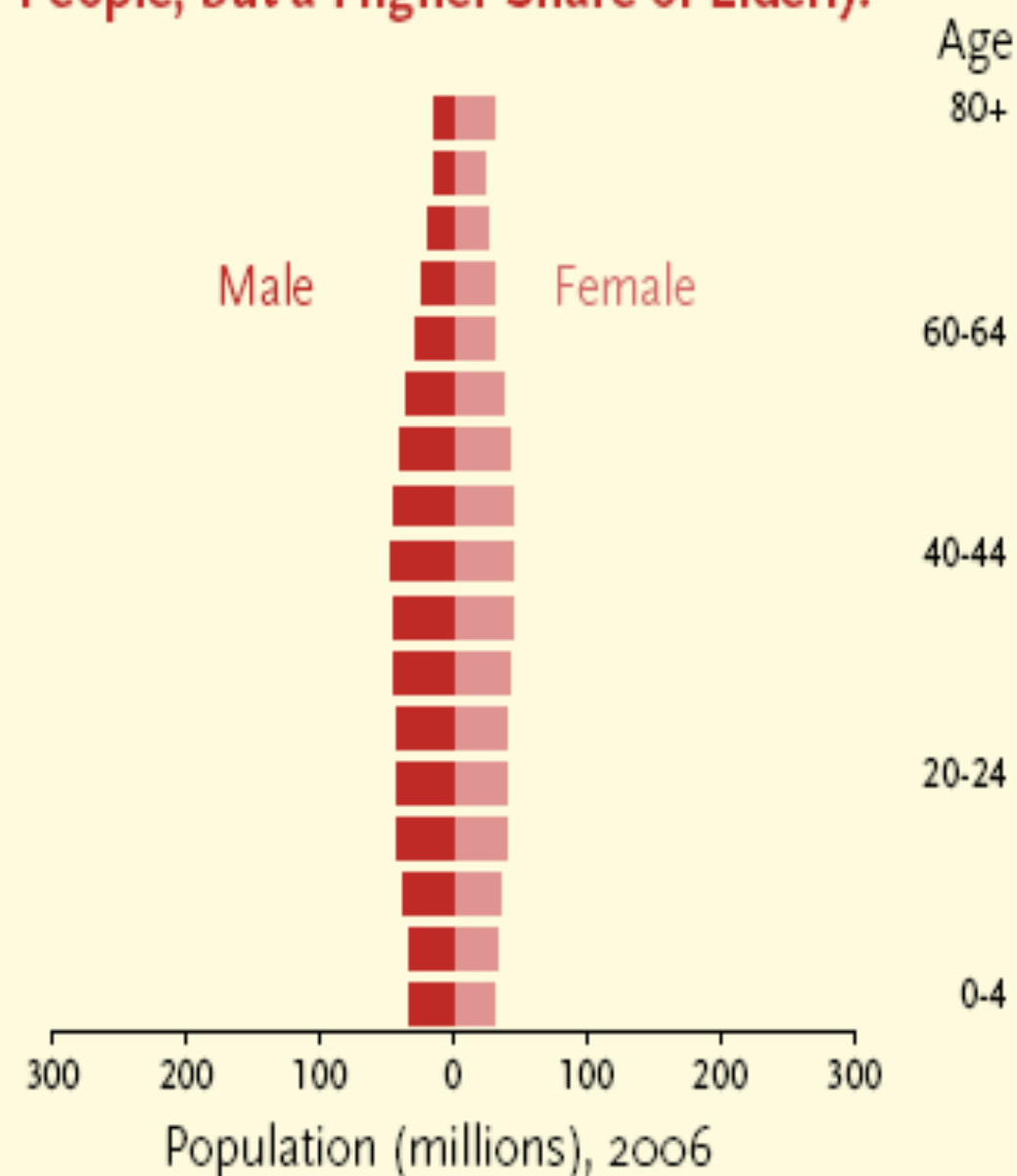
Global Population Growth Is Driven By Developing Countries.

World population in billions, 1950-2050 (projected)

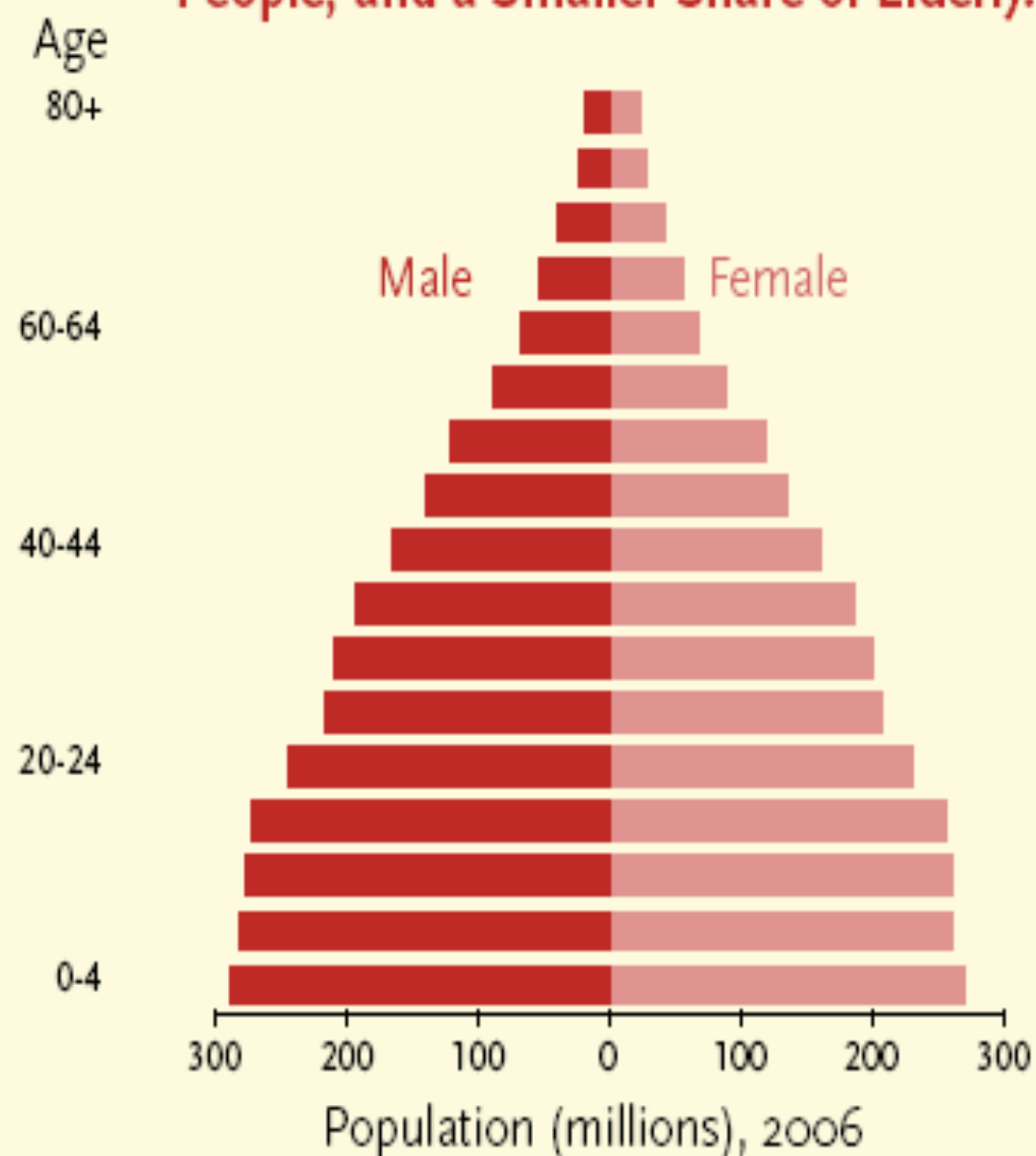


SOURCE: United Nations, *World Population Prospects: The 2006 Revision* (2007).

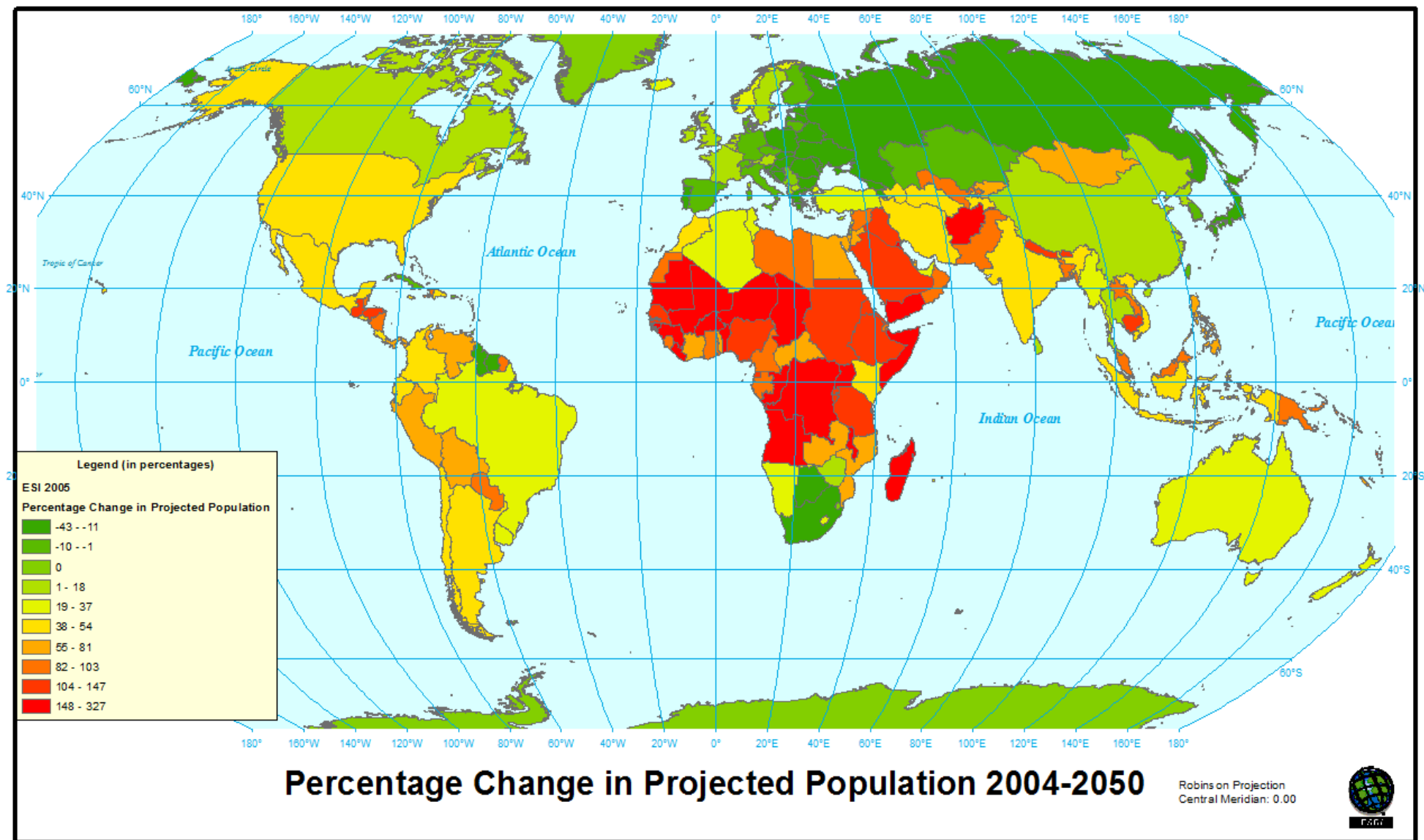
Developed Countries Have Fewer Young People, but a Higher Share of Elderly.



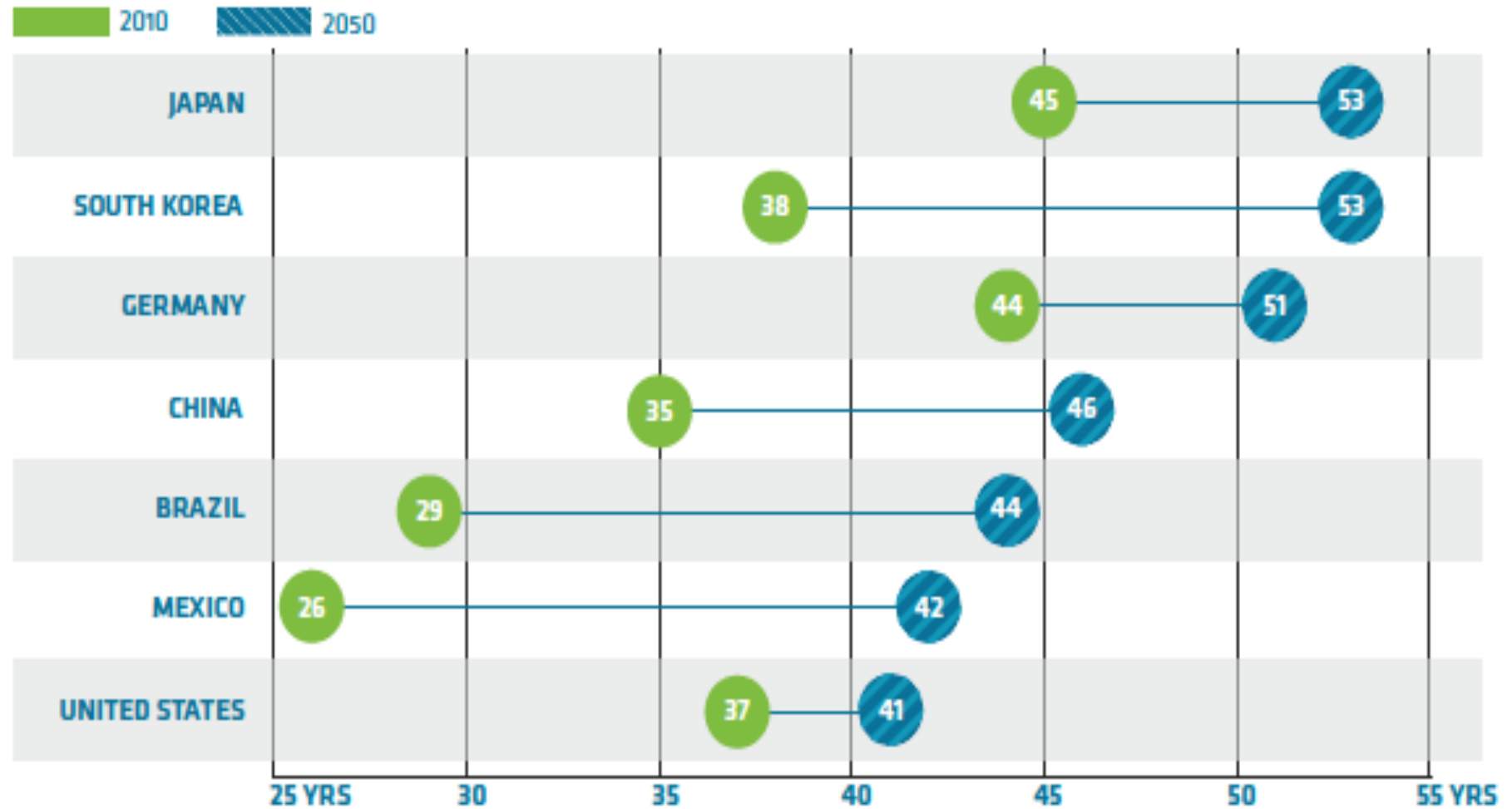
Developing Countries Have More Young People, and a Smaller Share of Elderly.



SOURCE: United Nations, *World Population Prospects: The 2006 Revision* (2007).



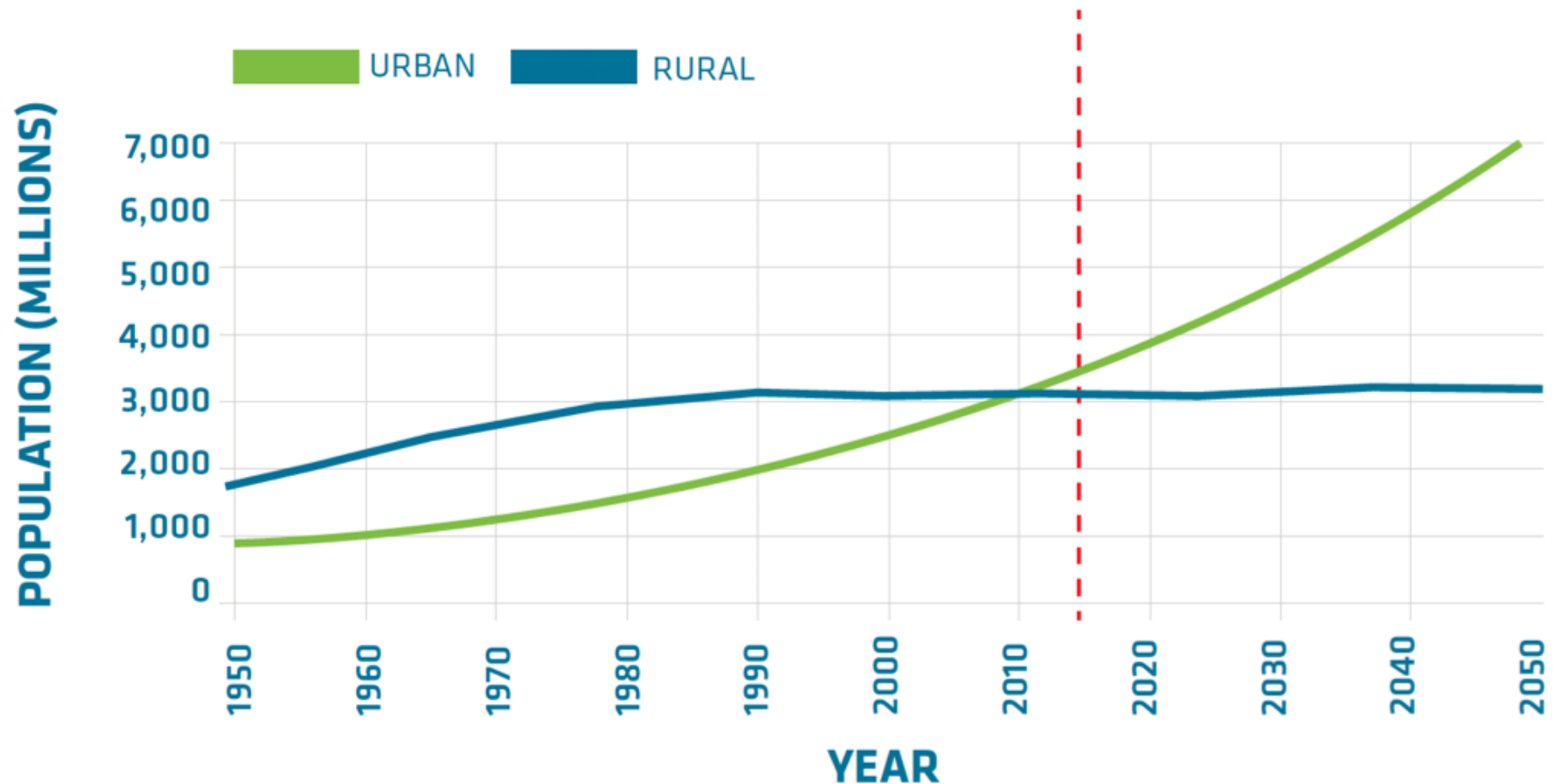
Median age in selected countries



“The urban population in 2014 accounted for 54% of the total global population, up from 34% in 1960, and continues to grow.”

World Health Organization (2015)

URBAN AND RURAL POPULATION OF THE WORLD, 1950-2050



Source: United Nations, Department of Economic and Social Affairs. World Urbanization Prospects, The 2014 Revision.

AN URBAN WORLD

This graphic depicts countries and territories with 2050 urban populations exceeding 100,000. Circles are scaled in proportion to urban population size. Hover over a country to see how urban it is (percentage of people living in cities and towns) and the size of its urban population (in millions).

Urban Population

- Greater than 75%
- 50% - 75%
- 25% - 50%
- Less than 25%

1950



AN URBAN WORLD

This graphic depicts countries and territories with 2050 urban populations exceeding 100,000. Circles are scaled in proportion to urban population size. Hover over a country to see how urban it is (percentage of people living in cities and towns) and the size of its urban population (in millions).

Urban Population

- Greater than 75%
- 50% - 75%
- 25% - 50%
- Less than 25%

2010



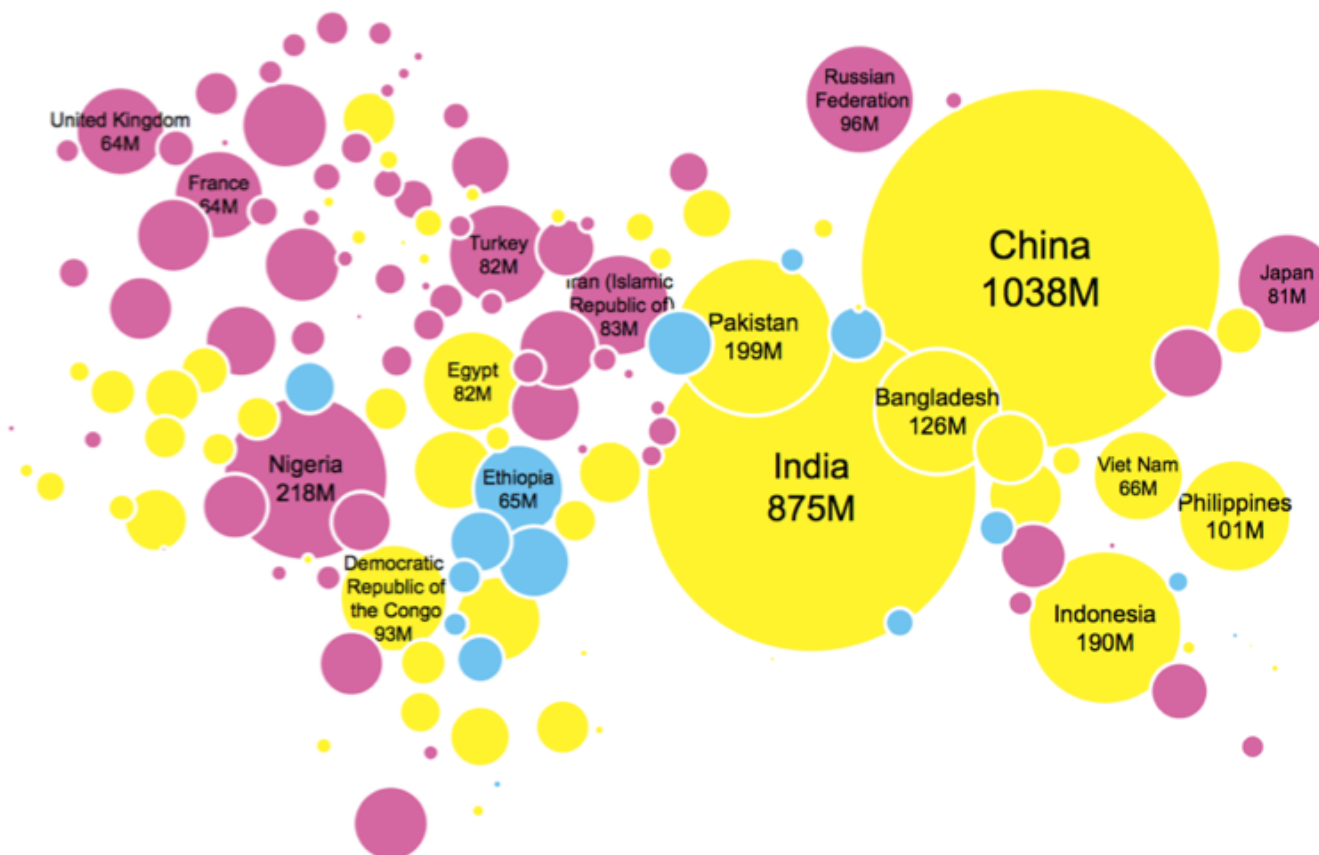
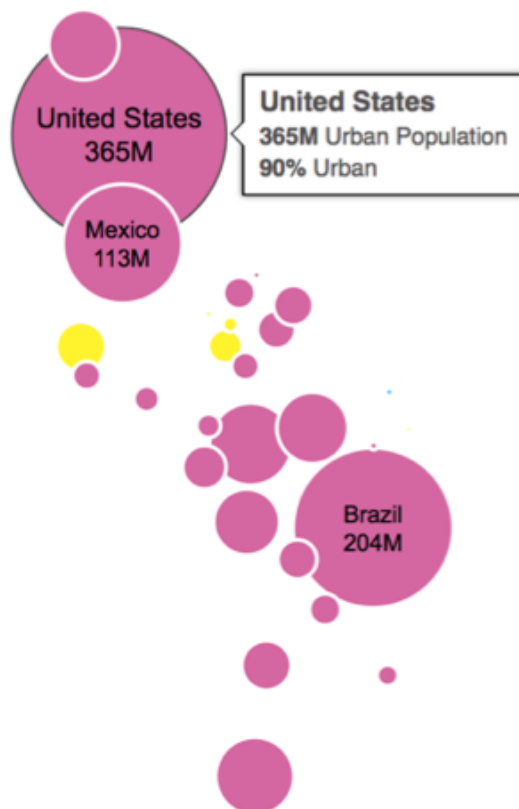
AN URBAN WORLD

This graphic depicts countries and territories with 2050 urban populations exceeding 100,000. Circles are scaled in proportion to urban population size. Hover over a country to see how urban it is (percentage of people living in cities and towns) and the size of its urban population (in millions).

Urban Population

- Greater than 75%
- 50% - 75%
- 25% - 50%
- Less than 25%

2050



Our 2019 Annual Letter

BY BILL & MELINDA GATES



We didn't see this coming



SURPRISE #3

We will build an entire New York City every month...

... for 40 years! The world's building stock
will double by 2060.

Built Environment is a Direct Reflection of the Underlying Economy



Agriculture Economy

- 1st version of the American Dream
- “40 Acres and a Mule”



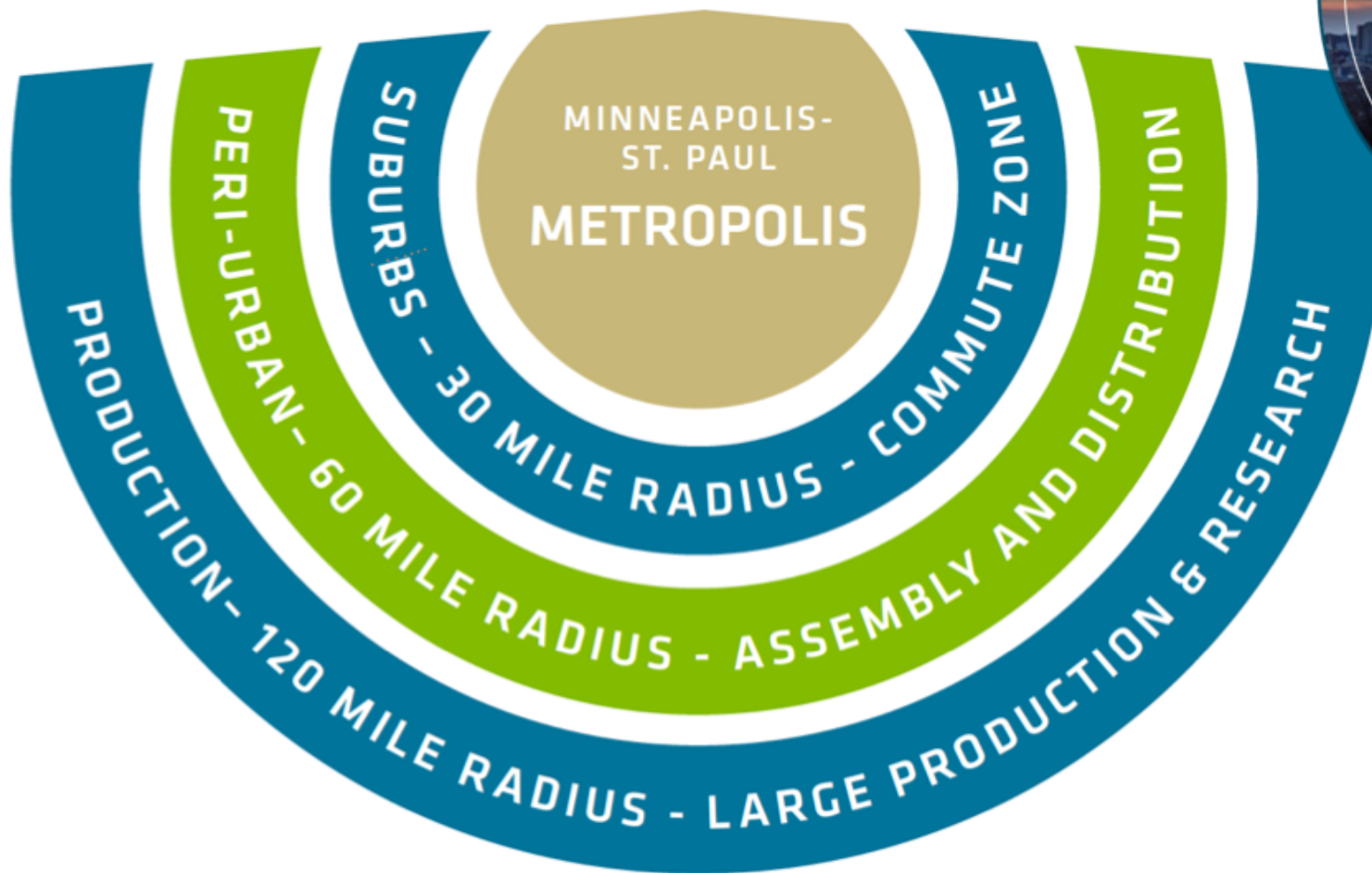
Industrial Economy

- 2nd version of the American Dream
- Drivable Sub-urban...”See the USA in Your Chevrolet”



Knowledge/Experience Economy

- Current/Future version of the American Dream
- *Option* of Walkable Urban and Drivable Sub-urban



Demographics, Population, Mass Urbanization

- Increasing global population
- People are living longer
- Global surge in younger cohorts
- Greater urbanization and mega cities
- Society is reconfiguring around urban hubs



Create Future Intelligence™

www.future-iq.com

Demographics, population and mass urbanization

What does this mean for Mitchell?





Macro-economics, shifting power and changing societal values

future→iQ

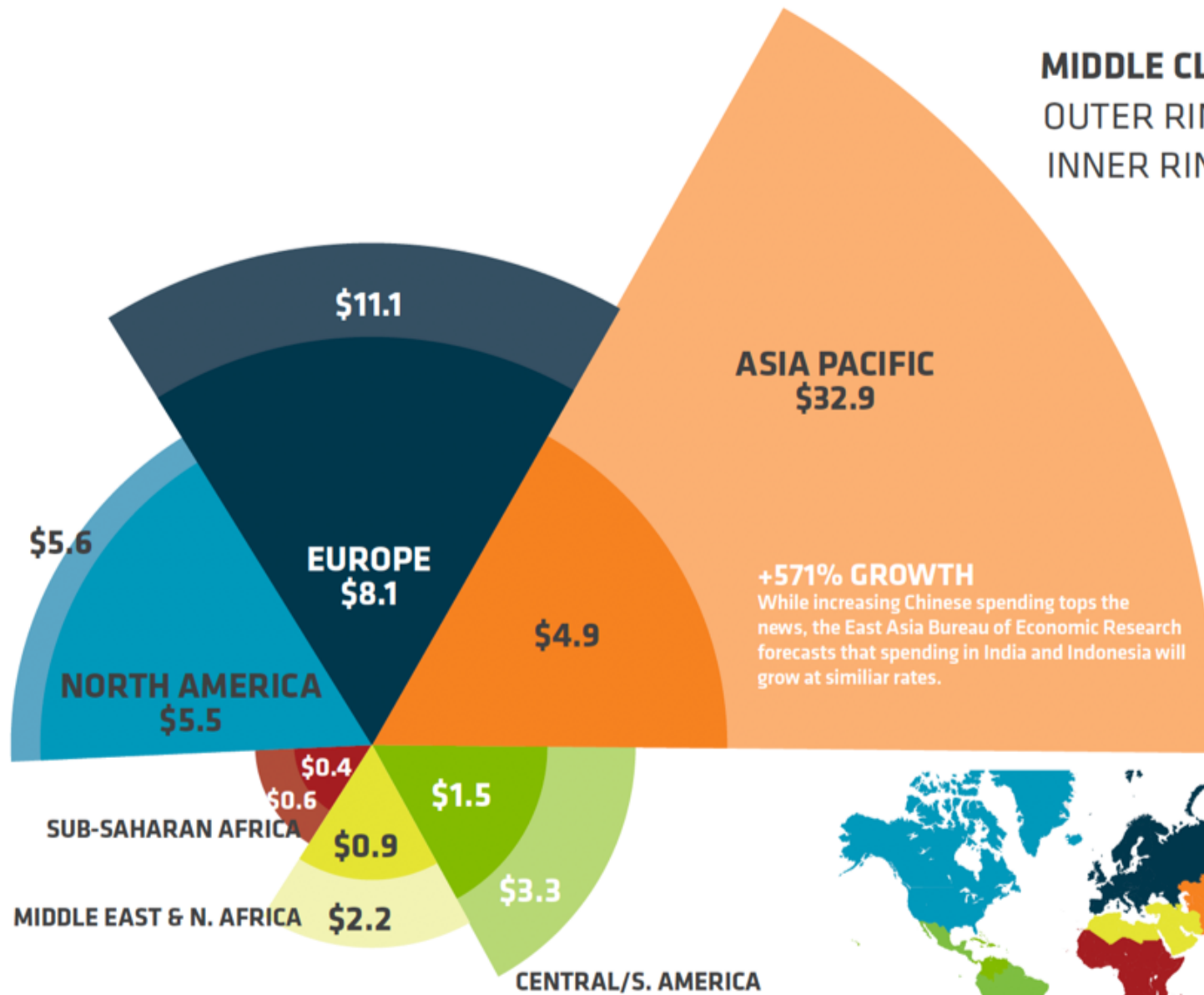
Create **Future Intelligence**™

www.future-iq.com

MIDDLE CLASS CONSUMER SPENDING

OUTER RING: 2030 IN TRILLIONS, USD

INNER RING: 2009 IN TRILLIONS, USD



+571% GROWTH

While increasing Chinese spending tops the news, the East Asia Bureau of Economic Research forecasts that spending in India and Indonesia will grow at similar rates.



Source: Kou, L. 2013. The world's middle class will number 5 billion by 2030. Quartz.
Figures based on OECD, 2012. An emerging middle class.



2 BILLION

PEOPLE DON'T GET ENOUGH VITAMINS AND MINERALS

795 MILLION

PEOPLE DON'T GET ENOUGH CALORIES

161 MILLION

CHILDREN ARE CHRONICALLY UNDERNOURISHED

WE HAVE A BIG PROBLEM WITH
UNDERNUTRITION

WE HAVE A BIG PROBLEM WITH
OVERWEIGHT & OBESITY

1.9 BILLION

ADULTS ARE OVERWEIGHT OR OBESE

1 in 12

ADULTS HAVE DIABETES

42 MILLION

CHILDREN ARE OVERWEIGHT

Animal Proteins – the Pressure Point?

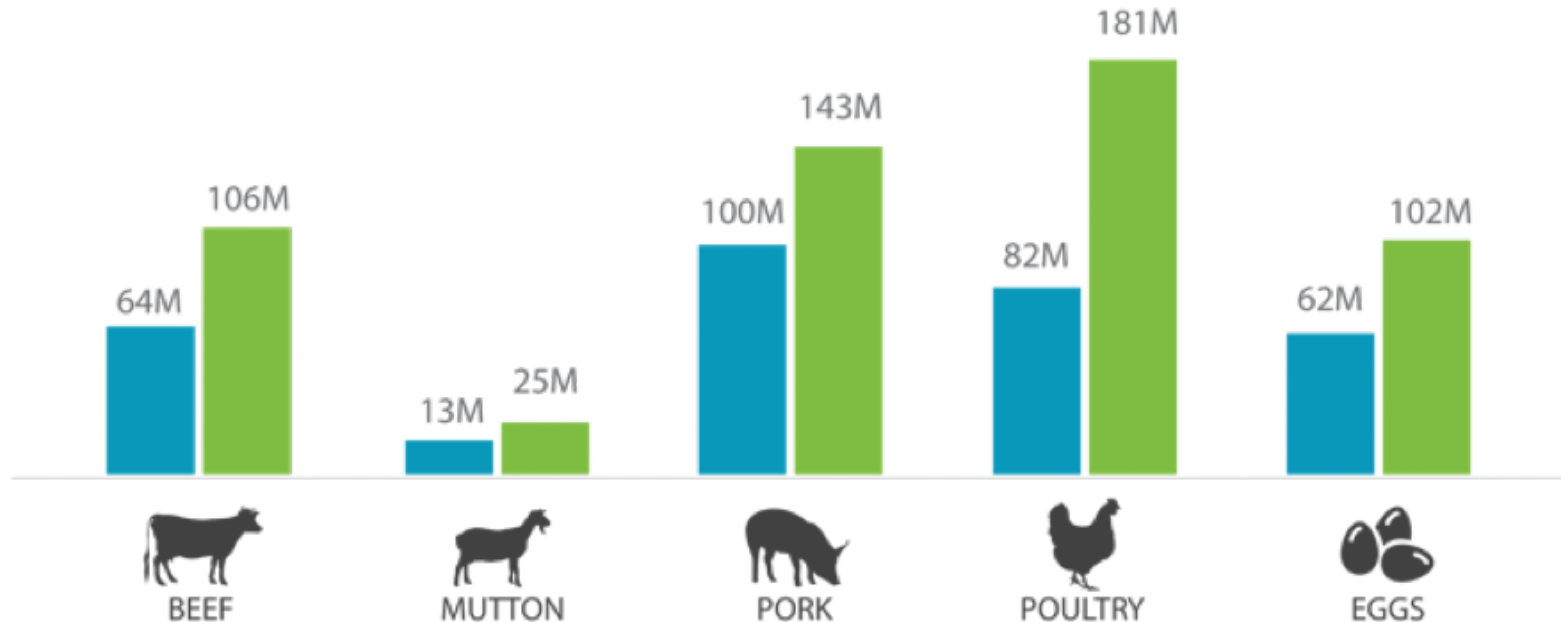
Around 99% of all meat in the US comes from factory farms

GLOBAL DEMAND FOR MEAT

2005 vs. 2050

(in tonnes)

2005 ■ 2050 ■



We're addicted to meat. And it's destroying the planet.

*World Economic Forum
26 Sept 2016*

Macro-economics and changing societal values

- Uneven global growth – growth and deflation uneven.
- US global role is changing
- Global financial and political architecture is changing
- Changing societal values

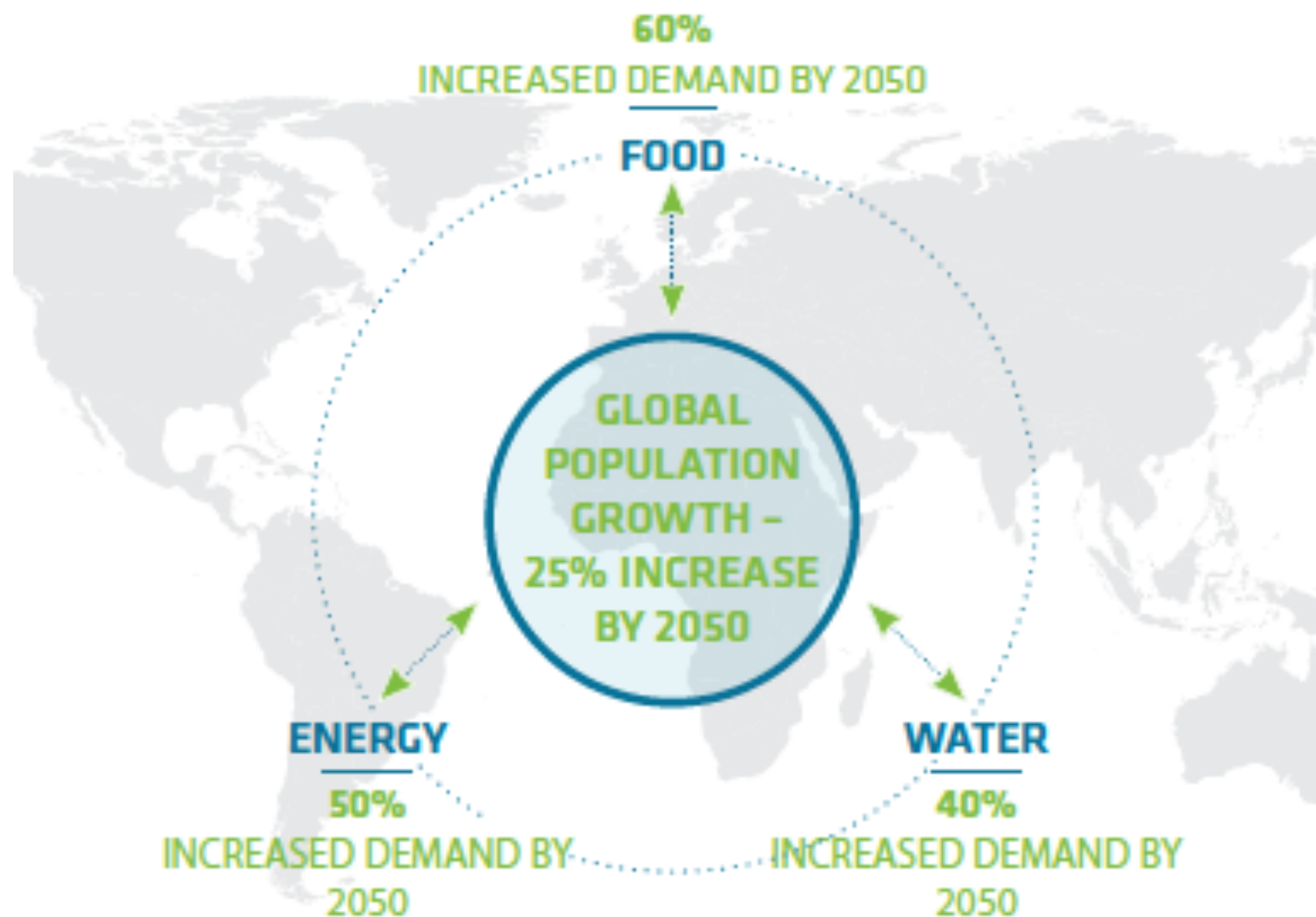
**Macro-economics and
changing societal values**

**What does this mean
for Mitchell?**





Energy + Water + Climate Change + Food



Energy

- At present 2.5 billion people rely on burning wood and animal dung as their chief source of energy
- 1.5 billion people have no electricity of any kind.



International Energy Agency's "World Energy Outlook 2009" report

North American shale plays (as of May 2011)

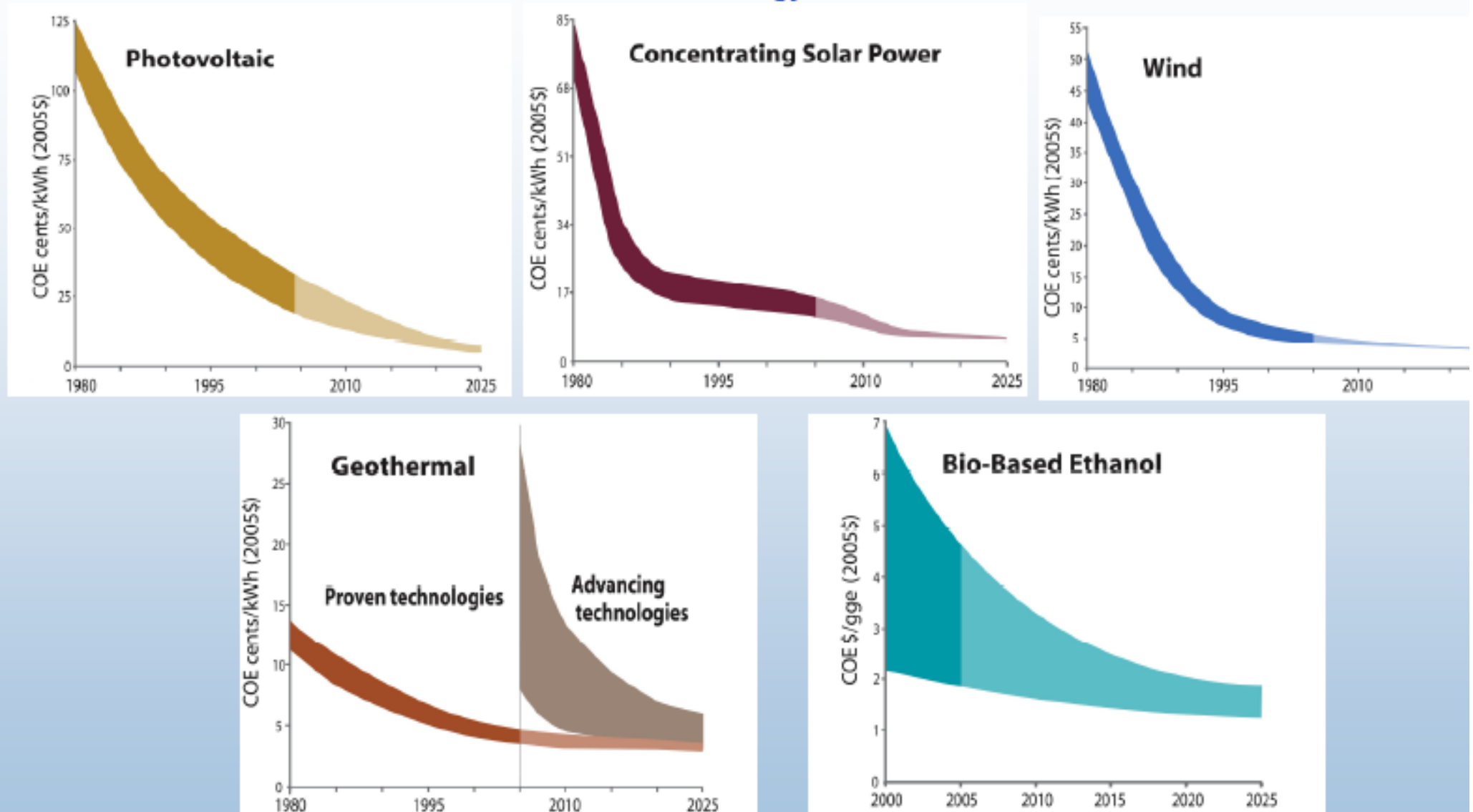


Renewable Energy



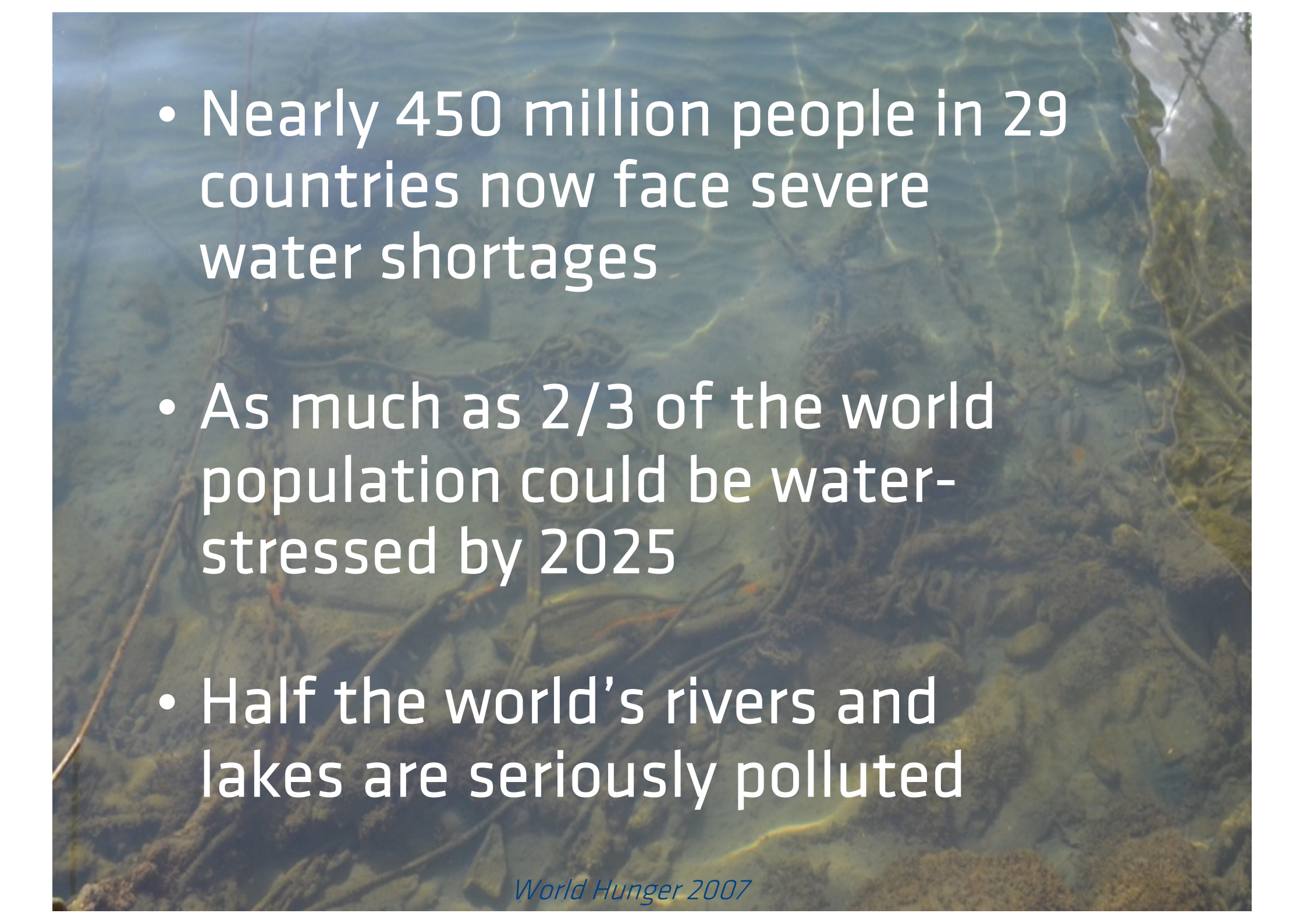
Renewable Energy Cost Trends

Levelized cost of energy in constant 2005\$¹



Source: NREL Energy Analysis Office (www.nrel.gov/analysis/docs/cost_curves_2005.ppt)

¹These graphs are reflections of historical cost trends NOT precise annual historical data. DRAFT November 2005

- 
- Nearly 450 million people in 29 countries now face severe water shortages
 - As much as 2/3 of the world population could be water-stressed by 2025
 - Half the world's rivers and lakes are seriously polluted

- Irrigation uses 70% of the world's fresh water
- Water scarcity, not lack of arable land, will be the chief constraint to increased food production
- The threat to water resources stands as one of the major crises facing the planet

World Hunger 2007

*Midwest has 20% of global
fresh water resources*





Food Demand

The relative growth of **staple grains** required by 2050 is approximately 46%, while **animal protein** growth is 76%

Rural Industries Research and Development Corporation (RIRDC) report, Rural Industry Futures: megatrends impacting Australian agriculture over the coming twenty years.



PREVALENCE OF
UNDERNOURISHMENT
IN THE TOTAL POPULATION
(PERCENT) IN 2015-17

<5%

Very
low

5-14.9%

Moderately
low

15-24.9%

Moderately
high

25-34.9%

High

35%
and
over

Very
high

Missing or
insufficient data

Undernourishment is defined as the condition in which an individual's habitual food consumption is insufficient to provide the amount of dietary energy required to maintain a normal, active, healthy life. The indicator is reported as the prevalence of undernourishment (PUN), which is an estimate of the percentage of individuals in the total population that are in a condition of undernourishment. To reduce the influence of possible estimation errors in some of the underlying parameters, national estimates are reported as a three-year moving average.
Source: FAO, IFAD, UNICEF, WFP and WHO, 2018, The State of Food Security and Nutrition in the World 2018. Building climate resilience for food security and nutrition, Rome, FAO.
Further information is available at www.wfp.org/publications/2018-state-food-security-and-nutrition-world-report

© 2018 World Food Programme

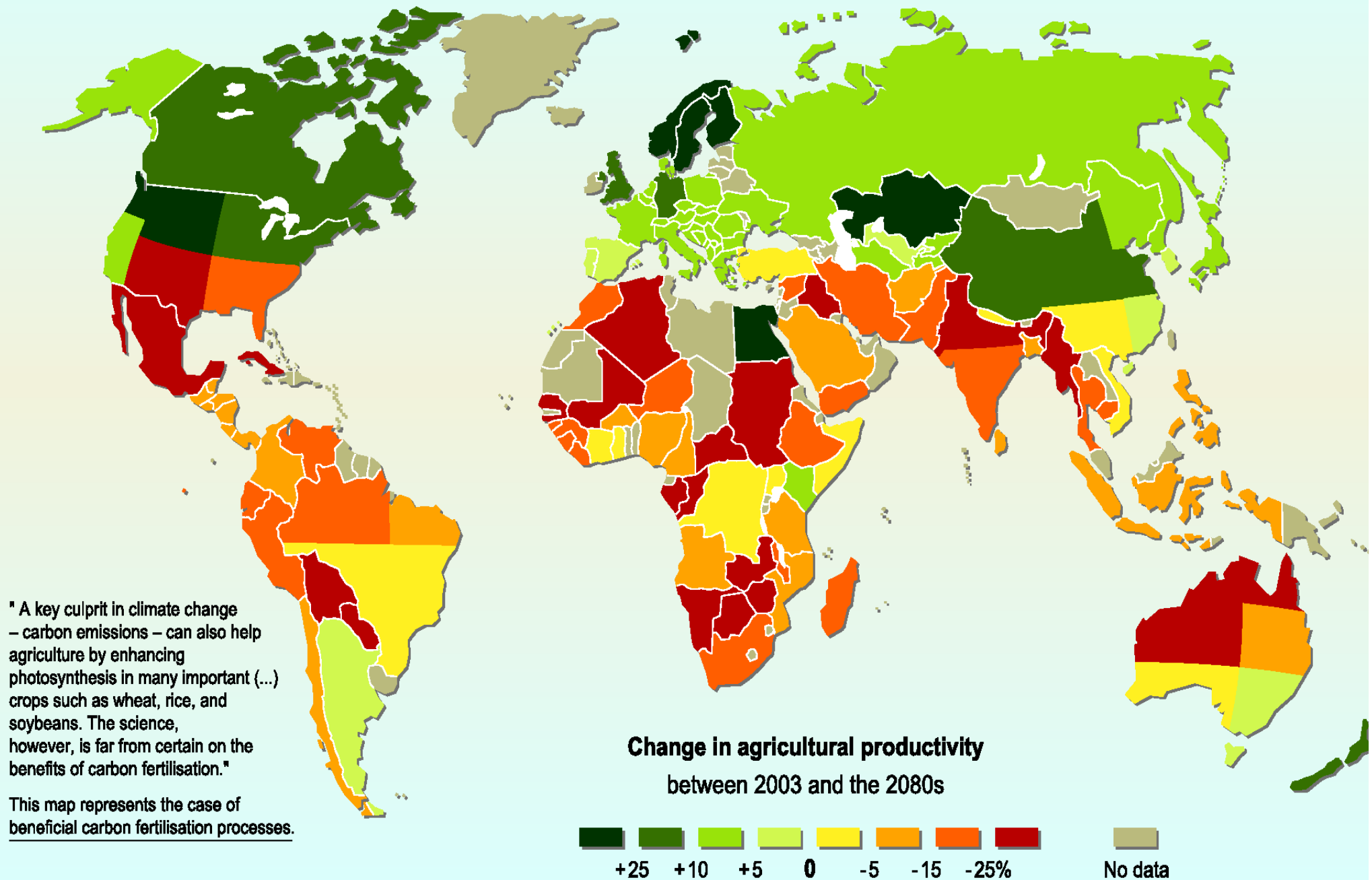
The designations employed and the presentation of material in this map does not imply the expression of any opinion whatsoever on the part of WFP concerning the legal or constitutional status of any country, territory or city, or concerning the delimitation of its boundaries.

* A dispute exists between the governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).

** Denotes the representers approximately the line of Control in Jerusalem and Kashmir agreed upon by India and Pakistan. The final status of Jerusalem and Kashmir has not yet been agreed upon by the parties.

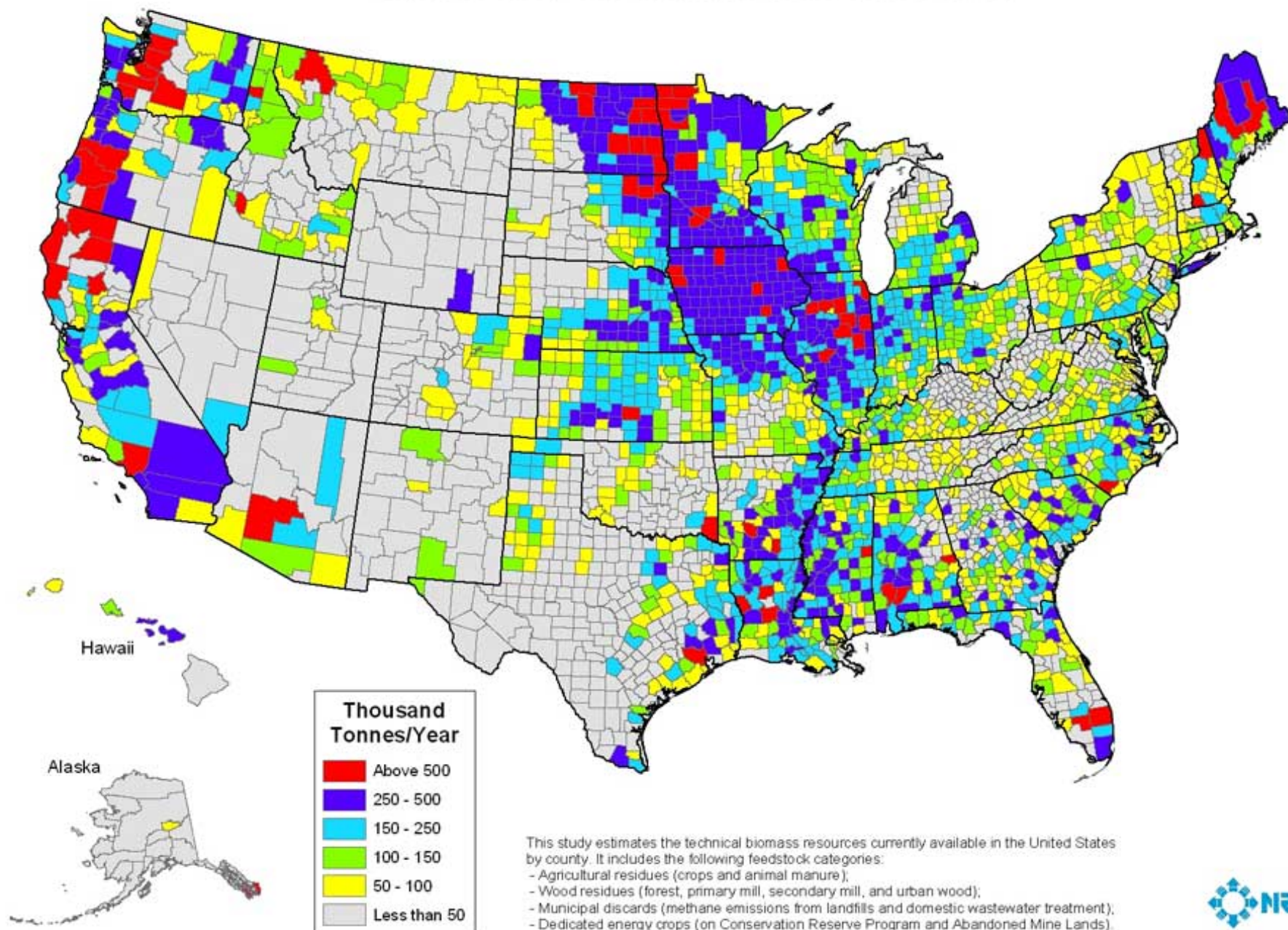
*** Final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined.

Projected impact of climate change on agricultural yields



Source: Cline W., 2007, *Global Warming and Agriculture*.

Biomass Resources Available in the United States



Energy + Water + Climate Change + Food

- Challenges with finite resource base
- Uneven impacts of climate change
- Potential for unexpected trends
- Disconnect between where food can be grown, and where it will be consumed

Energy + Water + Food + Changing Climate

What does this mean for Mitchell?





Technology + Next Industrial Revolution

Technology – a catalyst for change



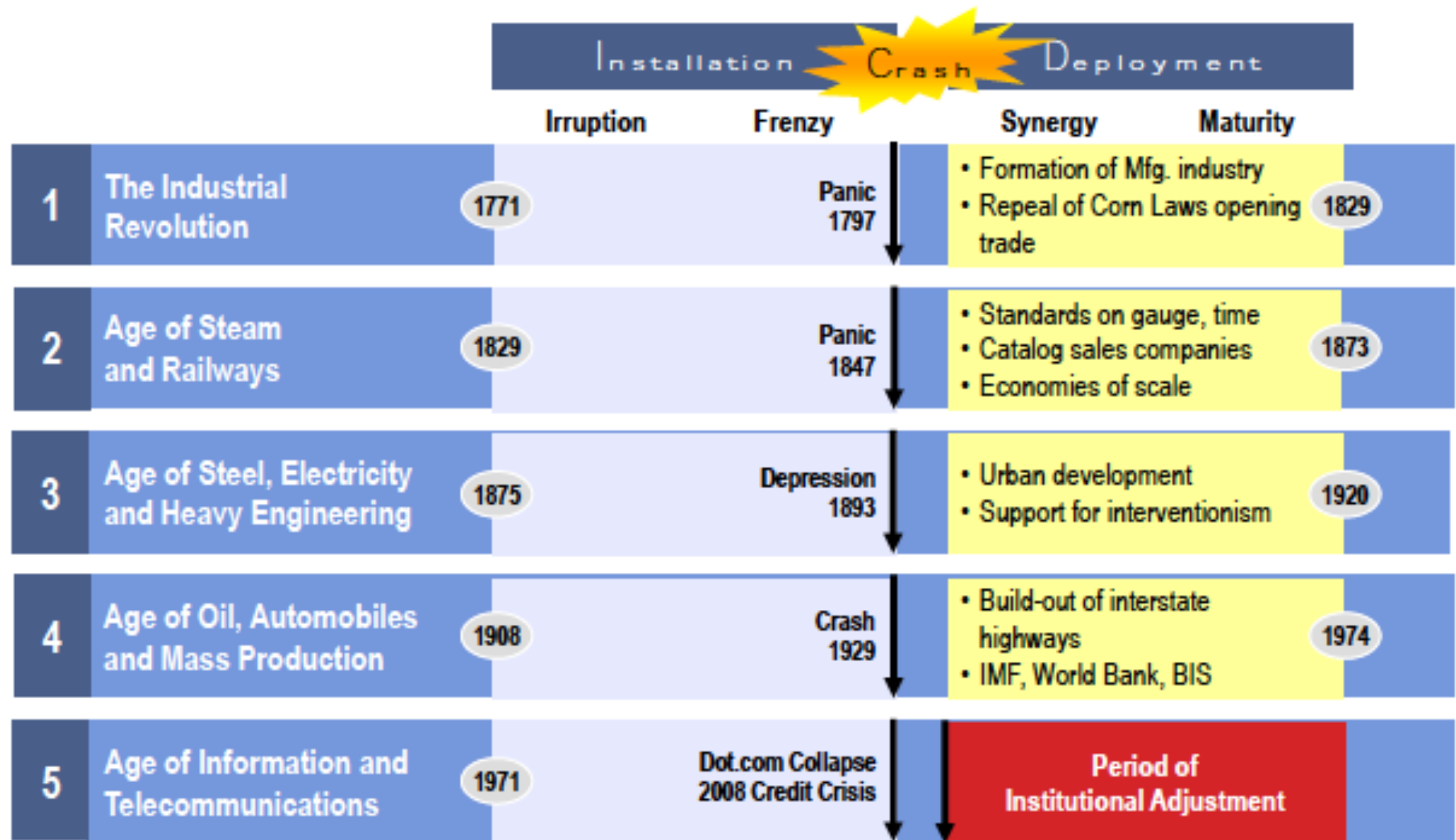
An analysis of the history of
technology shows that technological
change is exponential,

Imagine the last 100 years of
technological change and the
impacts on our lives.

The next 100 years of progress
in the 21st century.....

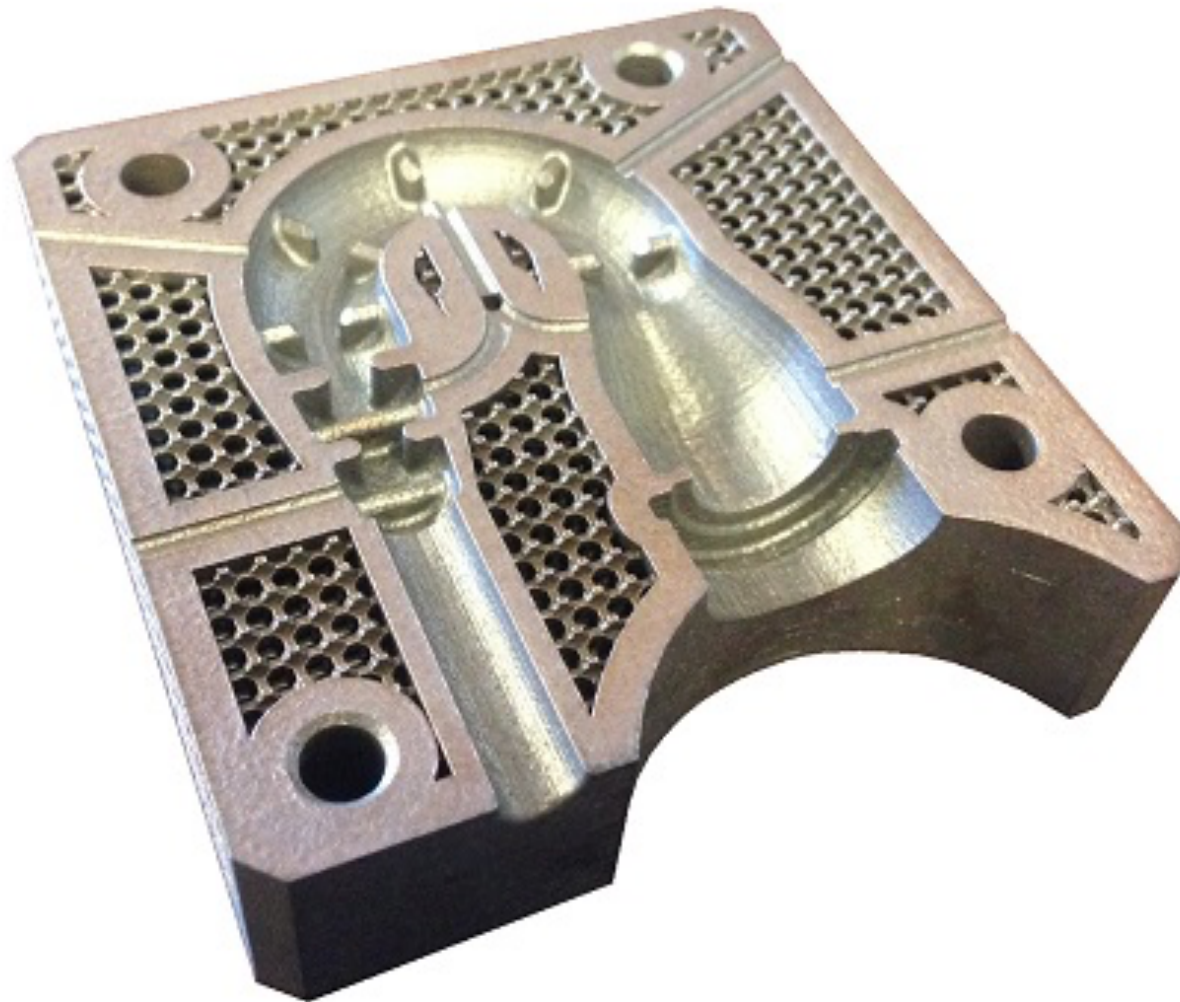
will be more like 20,000
years of progress
(at today's rate)

Five Technological Revolutions in 240 yrs



Source: Perez, C., "Technological Revolutions and Financial Capital", 2002

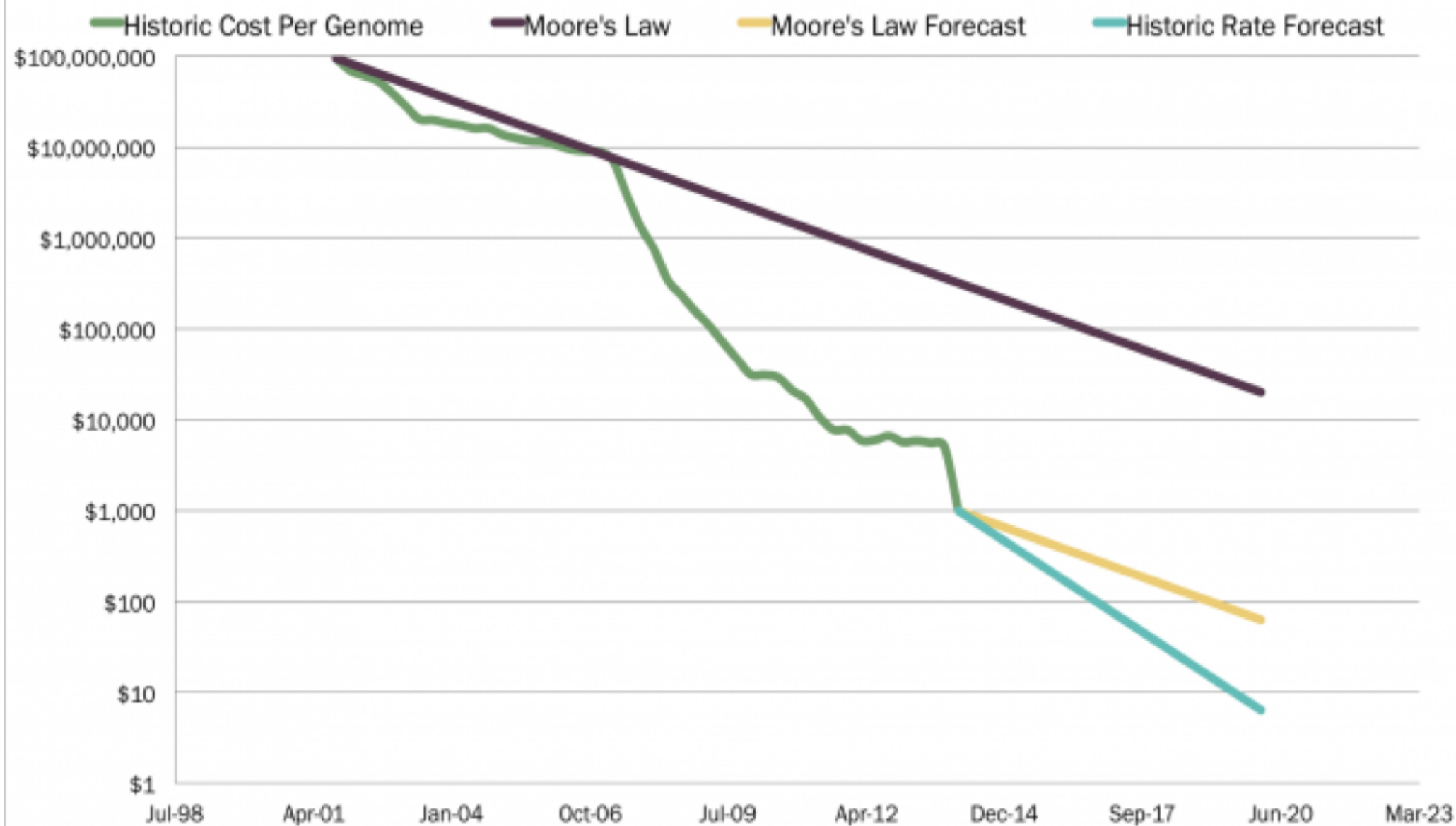
Additive – allowing incredible complexity in design and material composition



Complexity and prototyping



Cost Declines of Genome Sequencing



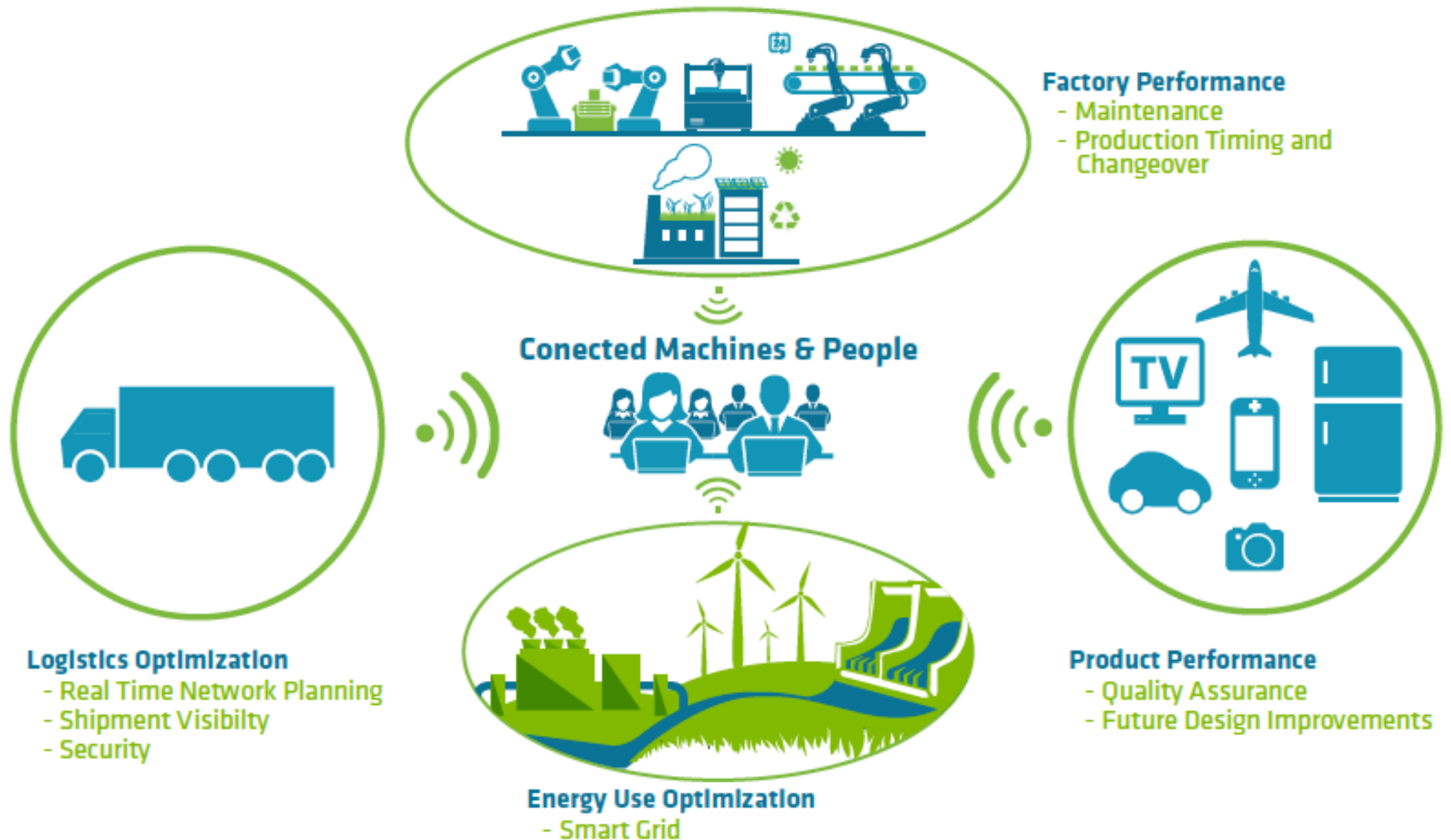
What makes this industrial revolution different?



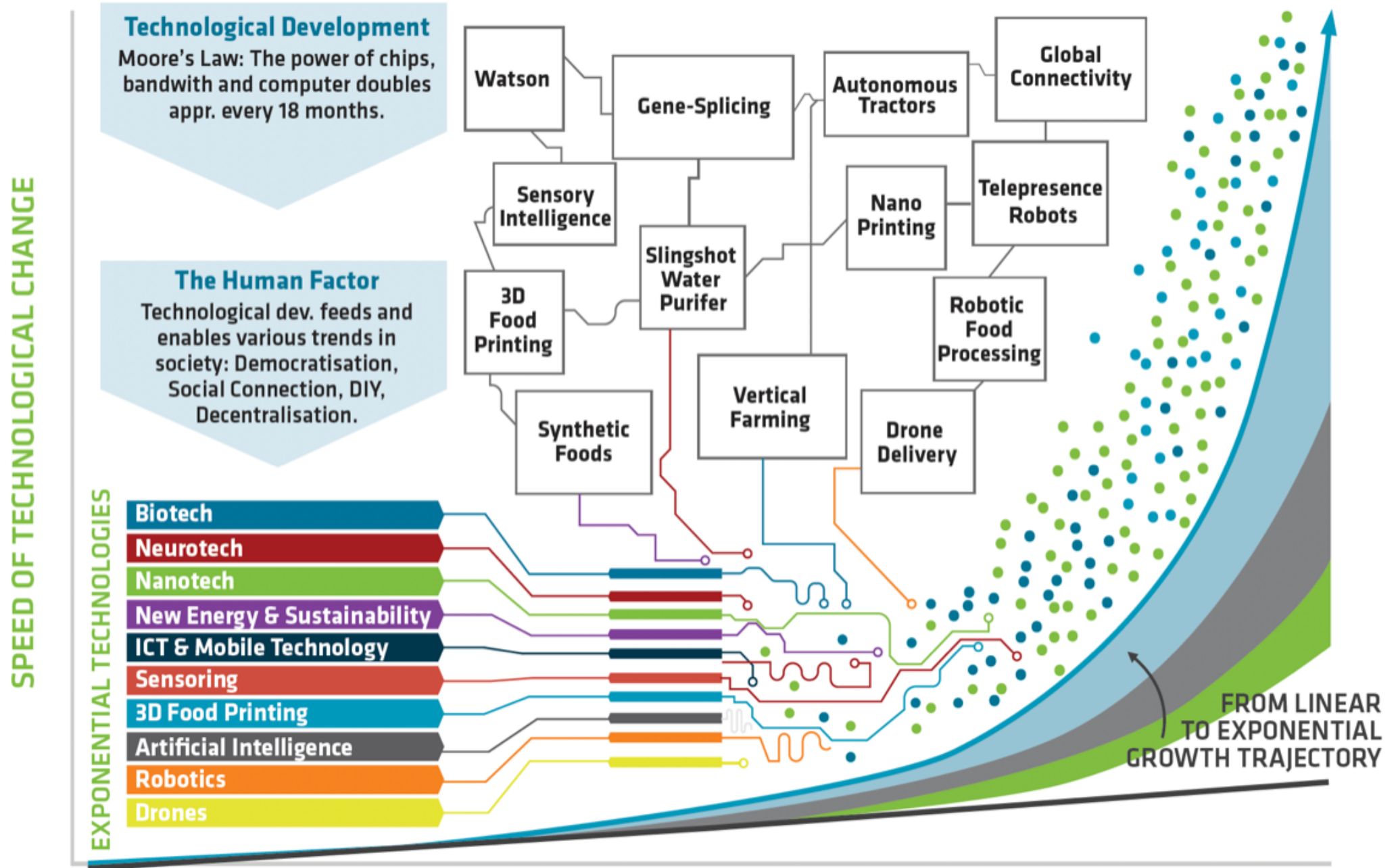
- Machine learning / Artificial Intelligence
- Converging technologies
- Exponential impacts



Industrial ‘Internet of things’



By 2020 – between 25 and 100 billion things will be connected to the internet



Adapted from: Source: Deloitte. 2014. Industry 4.0 Challenges and solutions for the digital transformation and use of exponential technologies

Technology + Next Industrial Revolution

- Impacting every corner of our lives
- Capacity to radically disrupt systems
- Changes in where things will be made
- New materials and new products

**Technology - driving and enabling
accelerated change**

What does this mean for Mitchell?



future→iQ
Create Future Intelligence™

**What internal trends are
happening (or are emerging)
that could be game-changers
for the future of Mitchell?**





Thank you!

For up-to-date information on the Mitchell
Community Vision 2040 project,
please visit:

**[http://lab.future-iq.com/city-of-mitchell-
community-visioning-project/](http://lab.future-iq.com/city-of-mitchell-community-visioning-project/)**

