

# On-Demand Cities

Thomas Fisher

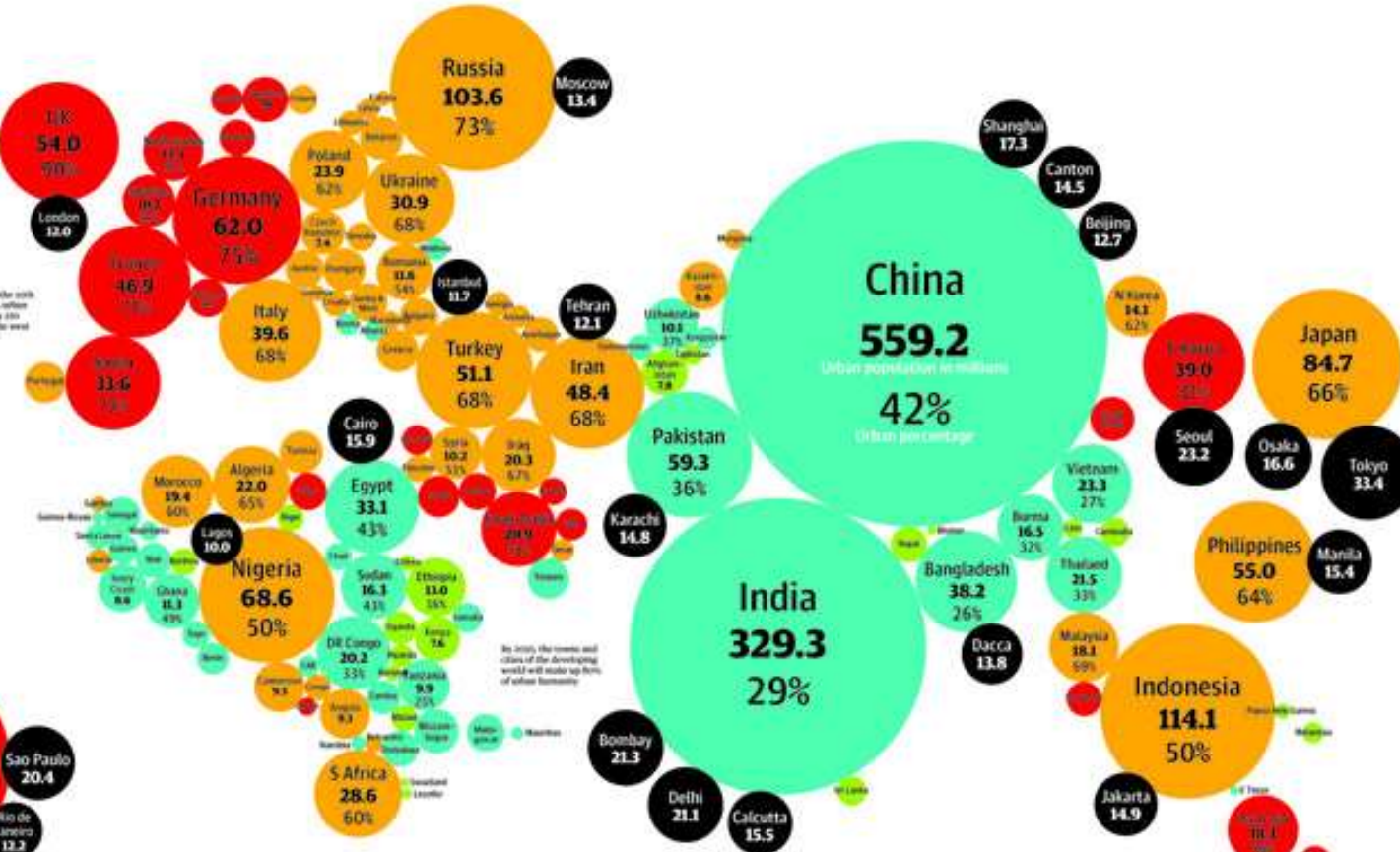
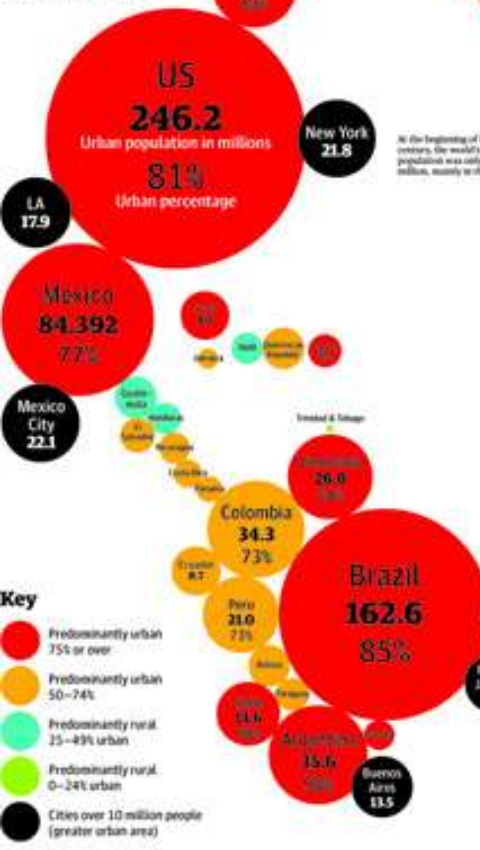
Dayton Hudson Chair in Urban Design

Director, Metropolitan Design Center

University of Minnesota

## The new urban world

The world's reaction is unprecedented. In most years, for the first time in history, more than half its population will be living in cities. Three billion people are expected to grow to 4 billion by 2015 - this unique map of the world shows where these people live now.



At the beginning of the 20th century, the world's urban population was only 200 million, mostly in the west.

By 2015, the trends and claims of the developing world will make up 60% of urban humanity.

### Key

- Predominantly urban 75% or over
- Predominantly urban 50-74%
- Predominantly rural 25-49% urban
- Predominantly rural 0-24% urban
- Cities over 10 million people (greater urban area)



3,307,950,000  
The world's urban population - from a total of 6.655 billion

# How does a *Ponzi Scheme* work?



Blue wants to make a quick buck



Blue tells Red that if Red gives Blue \$10, Blue will make it into \$20 for \$2 commission



Blue then goes to Orange and Green and offers them the same deal



With the money from Orange and Green, Blue pays back Red and makes his \$2 commission

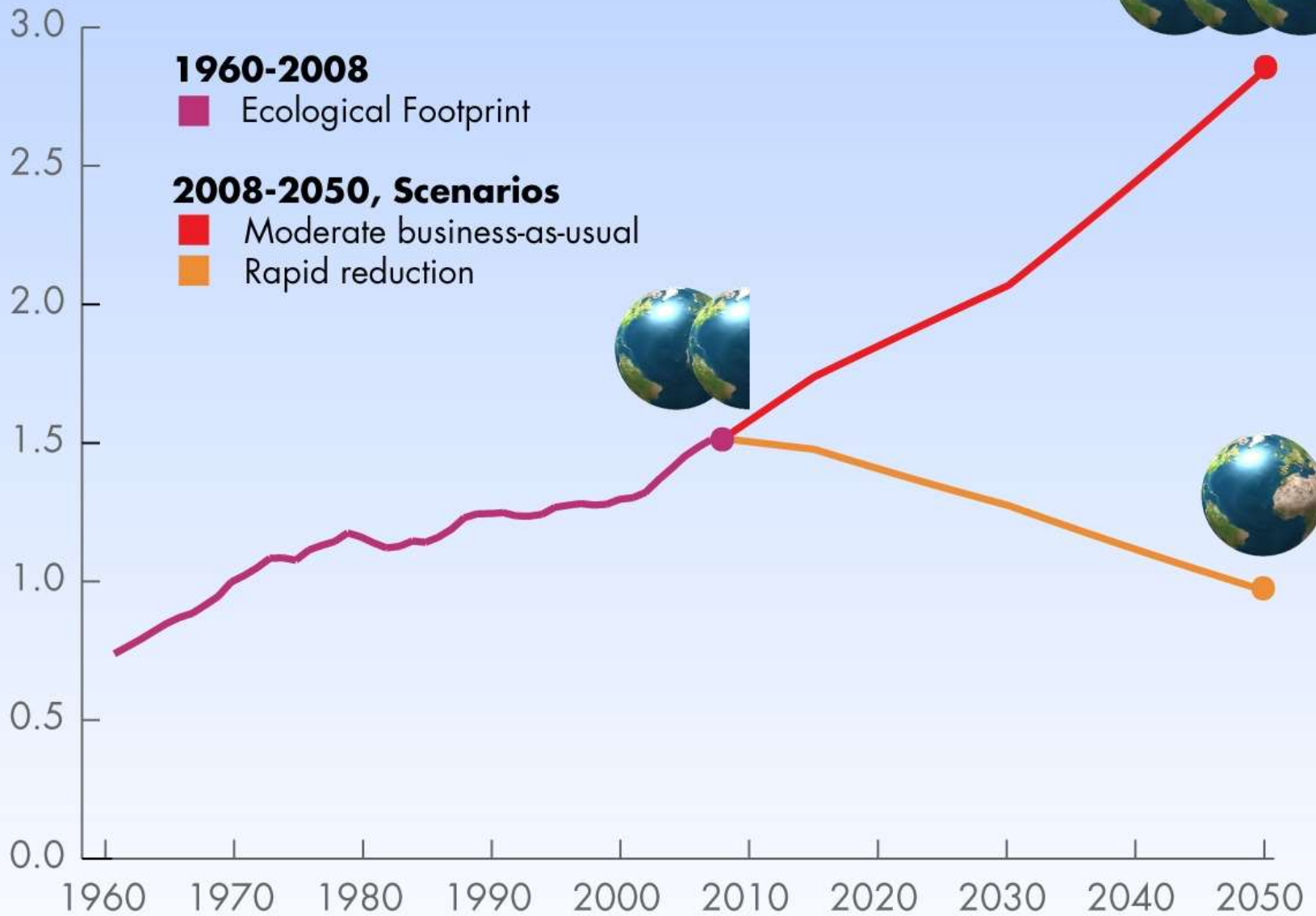


To pay back Orange and Green, Blue has to find 4 more people to take this deal



Eventually, Blue will run out of people willing to take this deal, and he won't be able to pay people back





*y-axis: number of planet earths, x-axis: years*

# CLIMATE DESTABILISATION

The average temperature rise across the globe

4°C

The arctic rise will be as much as

16°C

Coastal areas of Britain and New Zealand will see temperatures rise by

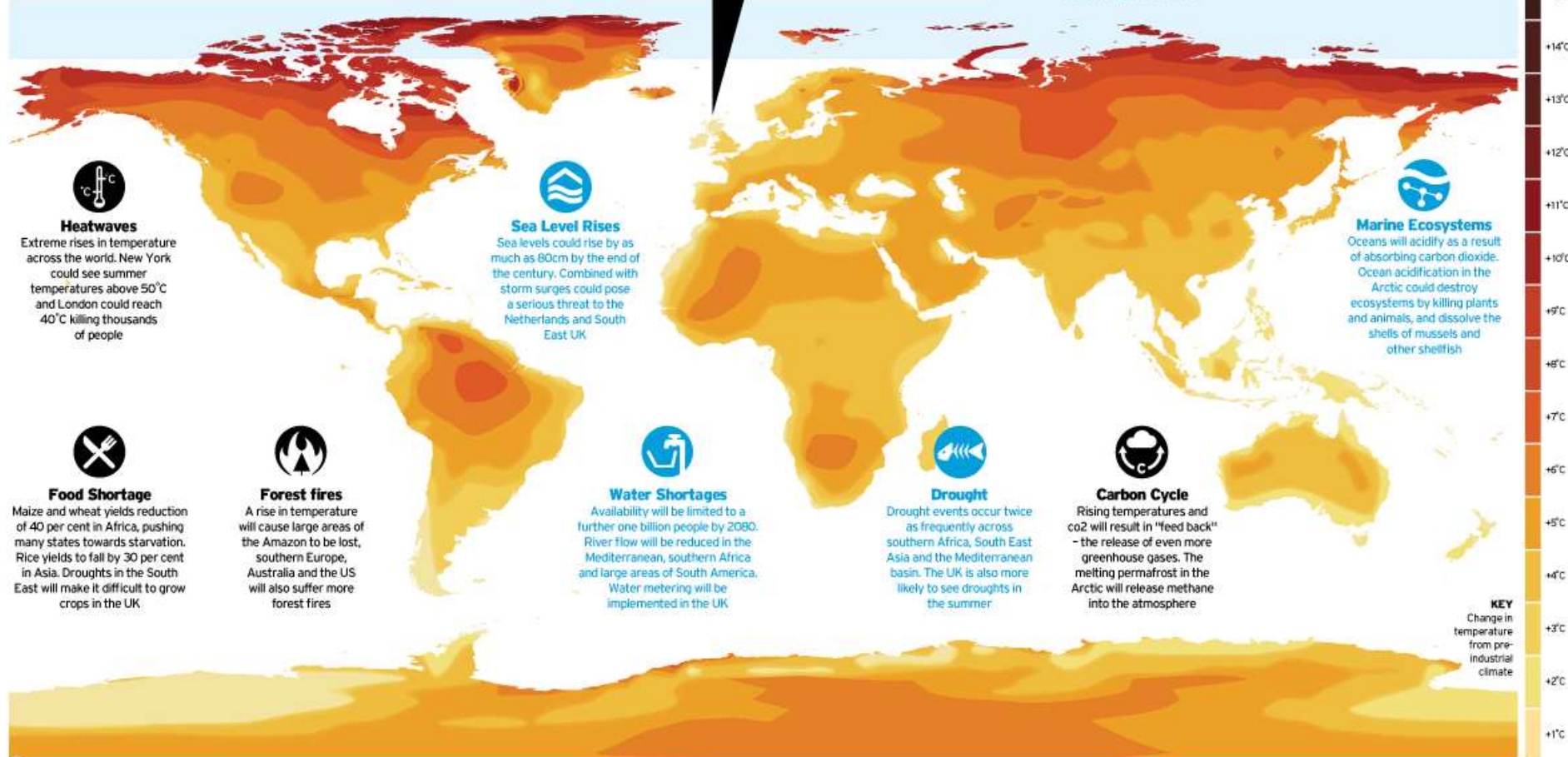
2°C

## Affects on the UK



## Melting Glaciers

Himalayan glaciers will be significantly reduced by 2050 putting the water source of billions of people at risk. South America and the Alps will also see glaciers retreat



### Heatwaves

Extreme rises in temperature across the world. New York could see summer temperatures above 50°C and London could reach 40°C killing thousands of people



### Sea Level Rises

Sea levels could rise by as much as 80cm by the end of the century. Combined with storm surges could pose a serious threat to the Netherlands and South East UK



### Marine Ecosystems

Oceans will acidify as a result of absorbing carbon dioxide. Ocean acidification in the Arctic could destroy ecosystems by killing plants and animals, and dissolve the shells of mussels and other shellfish



### Food Shortage

Maize and wheat yields reduction of 40 per cent in Africa, pushing many states towards starvation. Rice yields to fall by 30 per cent in Asia. Droughts in the South East will make it difficult to grow crops in the UK



### Forest fires

A rise in temperature will cause large areas of the Amazon to be lost, southern Europe, Australia and the US will also suffer more forest fires



### Water Shortages

Availability will be limited to a further one billion people by 2080. River flow will be reduced in the Mediterranean, southern Africa and large areas of South America. Water metering will be implemented in the UK



### Drought

Drought events occur twice as frequently across southern Africa, South East Asia and the Mediterranean basin. The UK is also more likely to see droughts in the summer

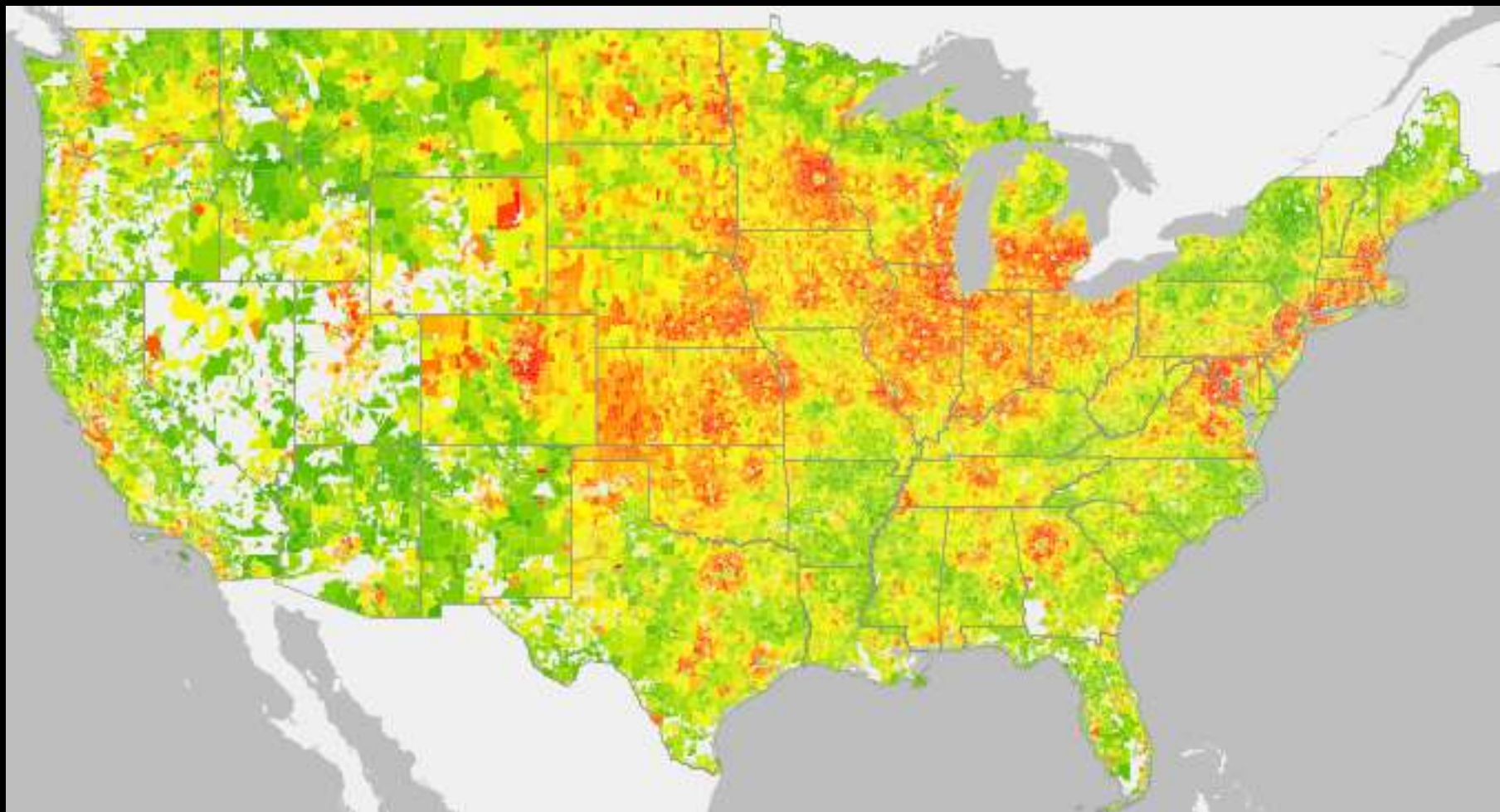


### Carbon Cycle

Rising temperatures and CO2 will result in "feed back" - the release of even more greenhouse gases. The melting permafrost in the Arctic will release methane into the atmosphere

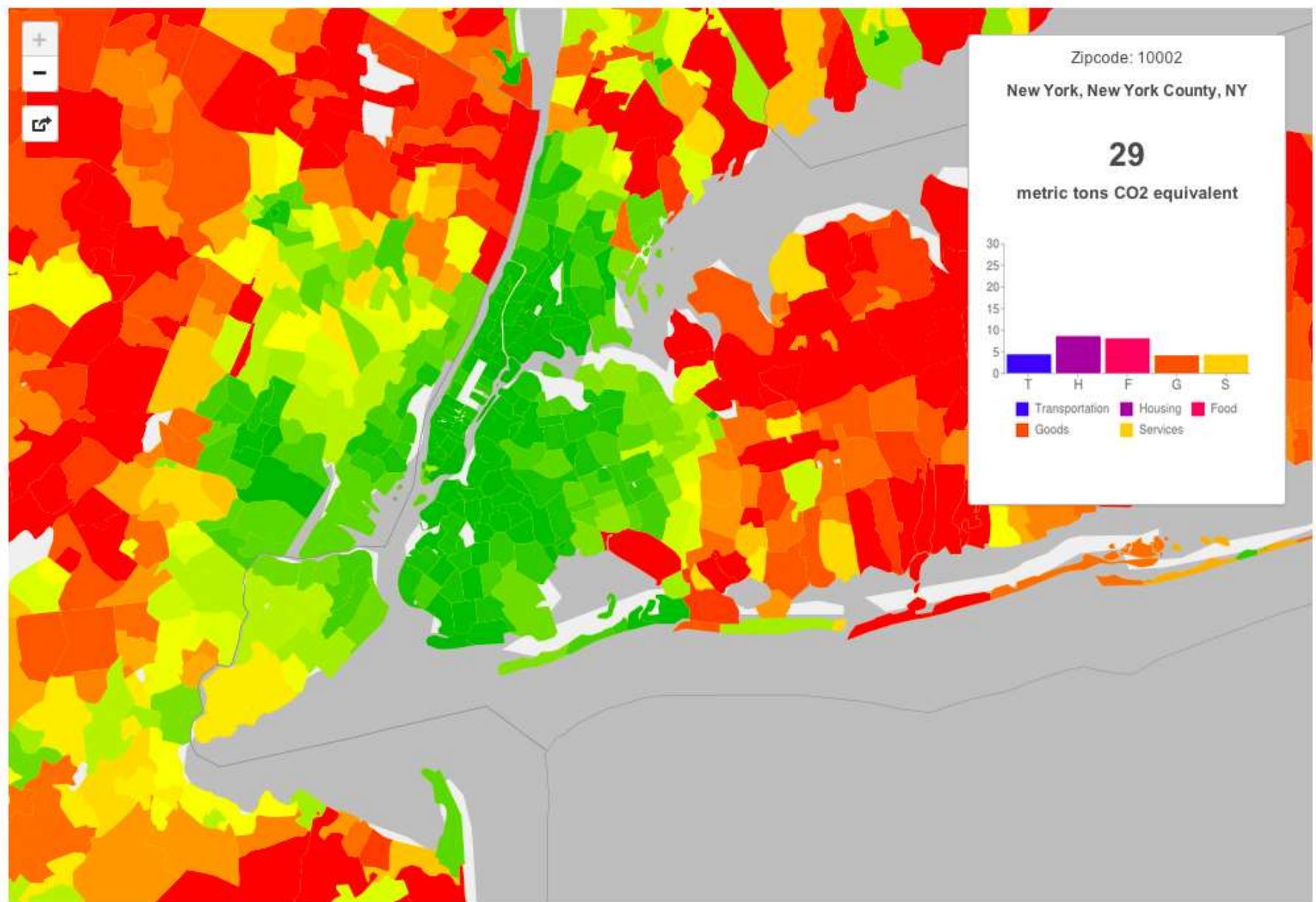
**KEY**  
Change in temperature from pre-industrial climate

+16°C  
+15°C  
+14°C  
+13°C  
+12°C  
+11°C  
+10°C  
+9°C  
+8°C  
+7°C  
+6°C  
+5°C  
+4°C  
+3°C  
+2°C  
+1°C

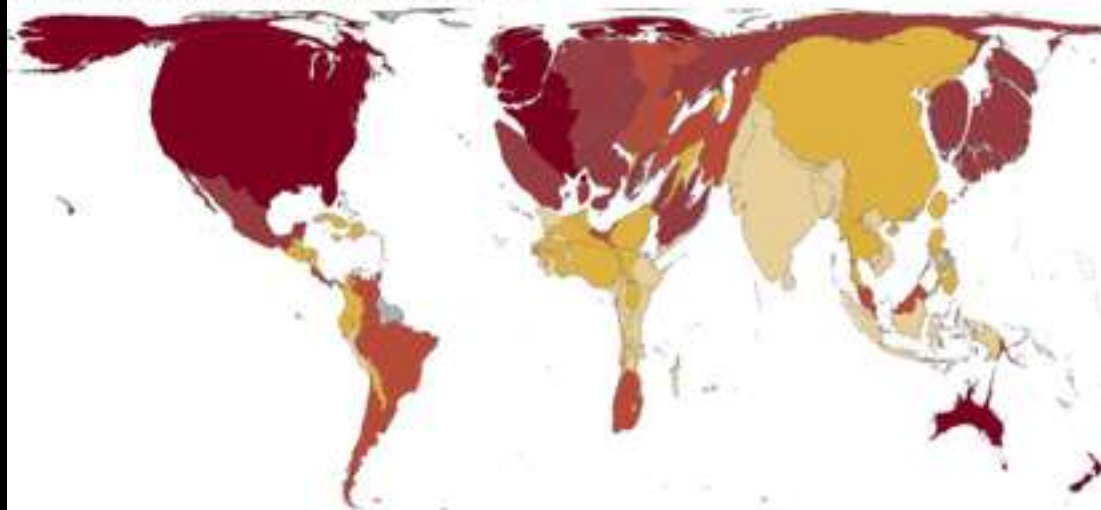


# Avg. Total Household Carbon Footprint by CoolClimate Network

Average annual household carbon footprint by Zip Code Tabulation Area



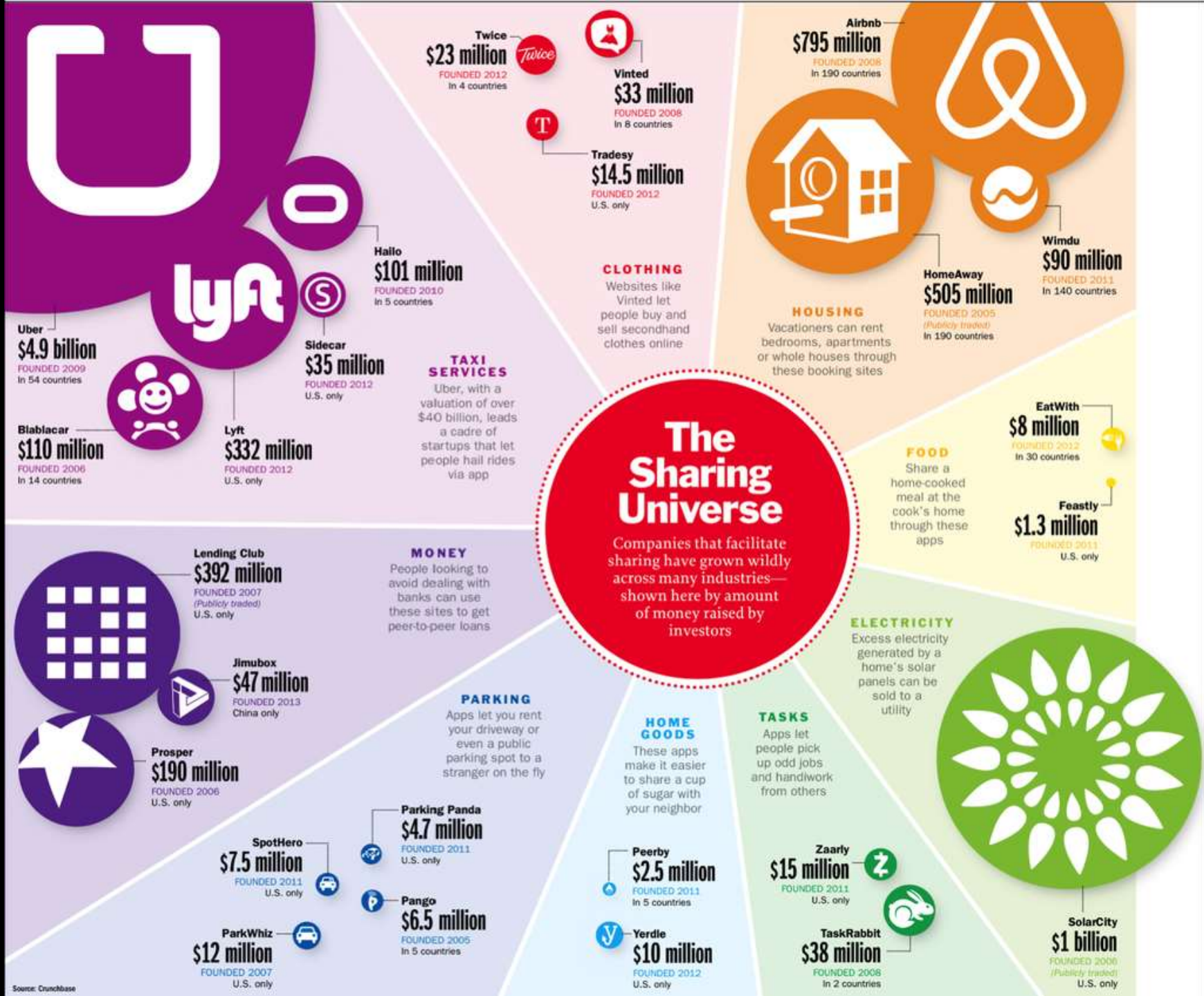
## GLOBAL ECOLOGICAL FOOTPRINTS



- More than 5.4 global hectares per person
- 3.6–5.4 global hectares per person
- 1.8–3.6 global hectares per person
- 0.9–1.8 global hectares per person
- Less than 0.9 global hectares per person
- Insufficient data

SOURCE: WWF





# The Sharing Universe

Companies that facilitate sharing have grown wildly across many industries—shown here by amount of money raised by investors

### HOUSING

Vacationers can rent bedrooms, apartments or whole houses through these booking sites

- Airbnb**  
\$795 million  
FOUNDED 2008  
In 190 countries
- HomeAway**  
\$505 million  
FOUNDED 2005 (Publicly traded)  
In 190 countries
- Wimdu**  
\$90 million  
FOUNDED 2011  
In 140 countries

### FOOD

Share a home-cooked meal at the cook's home through these apps

- EatWith**  
\$8 million  
FOUNDED 2012  
In 30 countries
- Feastly**  
\$1.3 million  
FOUNDED 2011  
U.S. only

### ELECTRICITY

Excess electricity generated by a home's solar panels can be sold to a utility

- SolarCity**  
\$1 billion  
FOUNDED 2006 (Publicly traded)  
U.S. only

### TASKS

Apps let people pick up odd jobs and handiwork from others

- Zaarly**  
\$15 million  
FOUNDED 2011  
U.S. only
- TaskRabbit**  
\$38 million  
FOUNDED 2008  
In 2 countries

### HOME GOODS

These apps make it easier to share a cup of sugar with your neighbor

- Peerby**  
\$2.5 million  
FOUNDED 2011  
In 5 countries
- Yerdle**  
\$10 million  
FOUNDED 2012  
U.S. only

### PARKING

Apps let you rent your driveway or even a public parking spot to a stranger on the fly

- Parking Panda**  
\$4.7 million  
FOUNDED 2011  
U.S. only
- Pango**  
\$6.5 million  
FOUNDED 2005  
In 5 countries

### MONEY

People looking to avoid dealing with banks can use these sites to get peer-to-peer loans

- Lending Club**  
\$392 million  
FOUNDED 2007 (Publicly traded)  
U.S. only
- Jimubox**  
\$47 million  
FOUNDED 2013  
China only
- Prosper**  
\$190 million  
FOUNDED 2006  
U.S. only
- SpotHero**  
\$7.5 million  
FOUNDED 2011  
U.S. only
- ParkWhiz**  
\$12 million  
FOUNDED 2007  
U.S. only

### TAXI SERVICES

Uber, with a valuation of over \$40 billion, leads a cadre of startups that let people hail rides via app

- Uber**  
\$4.9 billion  
FOUNDED 2009  
In 54 countries

### CLOTHING

Websites like Vinted let people buy and sell secondhand clothes online

- Twice**  
\$23 million  
FOUNDED 2012  
In 4 countries
- Vinted**  
\$33 million  
FOUNDED 2008  
In 8 countries
- Tradesty**  
\$14.5 million  
FOUNDED 2012  
U.S. only

### Other Companies

- lyft**  
\$332 million  
FOUNDED 2012  
U.S. only
- Hallo**  
\$101 million  
FOUNDED 2010  
In 5 countries
- Sidecar**  
\$35 million  
FOUNDED 2012  
U.S. only
- Blablacar**  
\$110 million  
FOUNDED 2006  
In 14 countries



# FOUR DRIVERS



TECH  
INNOVATION

+



VALUES  
SHIFT

+



ECONOMIC  
REALITIES

+



ENVIRONMENTAL  
PRESSURES

**Massive paradigm shift in how we live, work,  
play, travel, create, learn, bank and consume.**

# COLLABORATIVE CONSUMPTION

An economic model based on sharing, swapping, trading or renting products and services enabling access over ownership. It is reinventing not just what we consume but how we consume.



## COLLABORATIVE LIFESTYLES

Non-product assets such as space, skills and money are exchanged in new ways.

z-pod lyft airbnb



## REDISTRIBUTION MARKETS

Unwanted or underused goods redistributed.

gazelle freecycle.org ebay



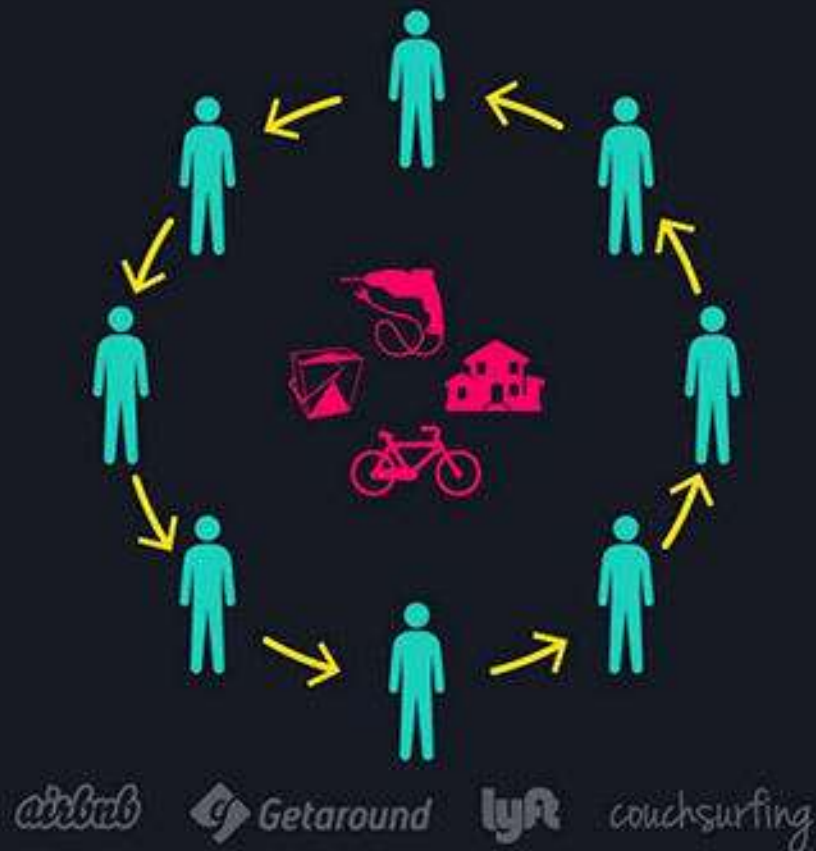
## PRODUCT SERVICE SYSTEMS

Pay to access the benefit of a product versus needing to own it outright.

zipcar Chegg RENT THE RUNWAY

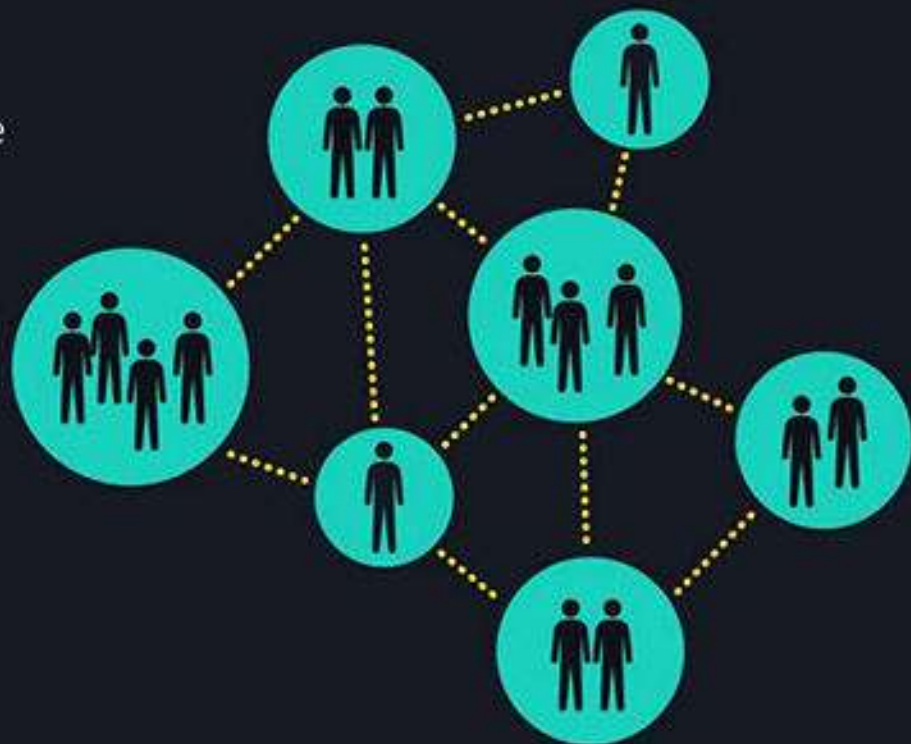
# SHARING ECONOMY

An economic model based on sharing underutilized assets from spaces to skills to stuff for monetary or non-monetary benefits. It is largely focused on P2P marketplaces.



# PEER ECONOMY

Person-to-person marketplaces that facilitate the sharing and direct trade of products and services built on peer trust.



airbnb

lyft

Getaround

KITCHENSURFING

Etsy

uberX

# COLLABORATIVE FINANCE SNAPSHOT

## SOCIAL LENDING

Real Estate  
LendInvest  
Fruitfull  
Landbay  
Groundfloor  
Money360  
Small Businesses  
Funding Circle  
SoMoLend  
Personal  
Zopa  
Kiva  
Lending Club  
Prosper  
SocietyOne

## CROWDFUNDING

Creative Projects  
Kickstarter  
Indiegogo  
MassiveMov  
Small Businesses  
Seedrs  
CircleUp  
Civic  
Crowdrise  
Start Some Good  
Personal  
GoFundMe  
Upstart  
Pave

## P2P CURRENCY TRANSFER

Transferwise  
Midpoint  
P2P Cash  
Peer Transfer  
CurrencyFair

## P2P INSURANCE

Friendsurance

## P2P DIGITAL CURRENCY

Bitcoin  
Ripple  
Litecoin

## P2P PAYMENT PLATFORMS

Stripe  
Balanced

## P2P PAYMENT NETWORKS

Mpesa  
MiCash  
Obopay

# The Economist

MARCH 9TH-15TH 2013

Economist.com

Hugo Chávez's rotten legacy

Is the stockmarket right?

Management tips for the Vatican

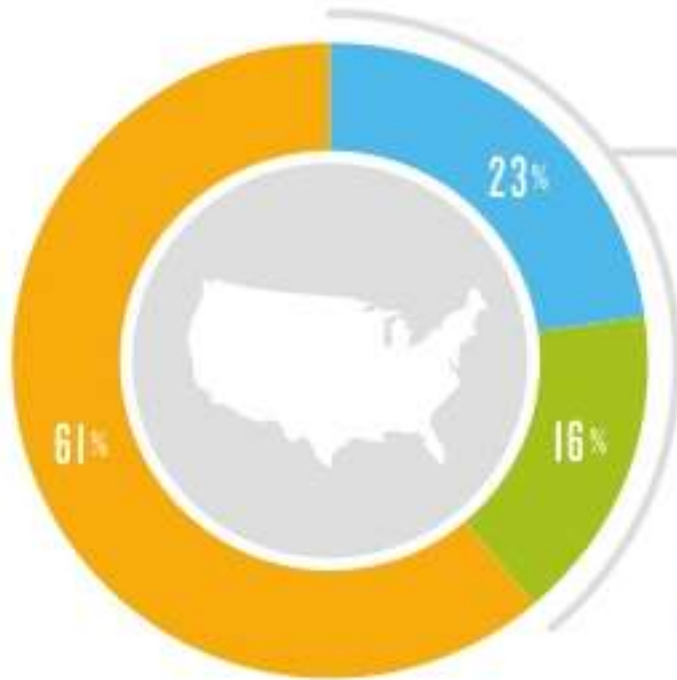
Getting Britain to grow

The comet that could hit Mars

## The sharing economy







**80 MILLION**  
SHARERS IN  
**USA**



**23 MILLION**  
SHARERS IN  
**UK**



**10 MILLION**  
SHARERS IN  
**CANADA**

● **NON-SHARERS**
● **RE-SHARERS**
● **NEO-SHARERS**

## BASIC DEMOGRAPHICS AND LIFESTYLE CHOICES



NON-SHARERS



RE-SHARERS



NEO-SHARERS

● FEMALE ● MALE



NON-SHARERS



RE-SHARERS



NEO-SHARERS

● 18-34 ● 35-54 ● 55+



NON-SHARERS



RE-SHARERS



NEO-SHARERS



MARRIED



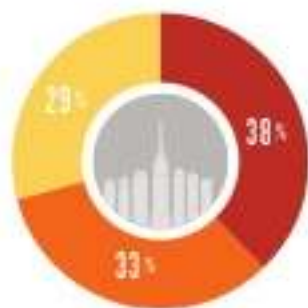
KIDS IN HOUSEHOLD



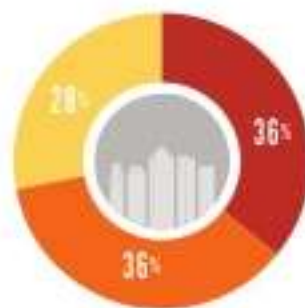
HOMEOWNER



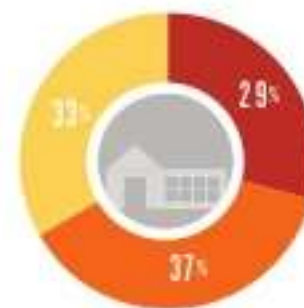
*In the past 12 months, have you ever used a website or mobile app for any of the following? / Asked Oct-Dec 2013*



**METRO NYC**



**TOP 10 URBAN CENTRES**



**OUTSIDE TOP 10 METRO AREAS**



*Age and location data from past profiling studies*

### HOW SHARERS SEE SHARING SERVICES

46%

ASSOCIATE **LOANER VEHICLES** WITH **SUSTAINABLE**  
ONLY 28% ASSOCIATE RETAIL STORES WITH SUSTAINABLE

41%

ASSOCIATE **SHARING PLACES TO STAY** WITH **COMMUNITY**  
ONLY 25% ASSOCIATE RETAIL STORES WITH COMMUNITY

48%

ASSOCIATE **LOANER PRODUCTS** WITH **HELPING OTHERS**  
ONLY 12% ASSOCIATE RETAIL STORES WITH HELPING OTHERS

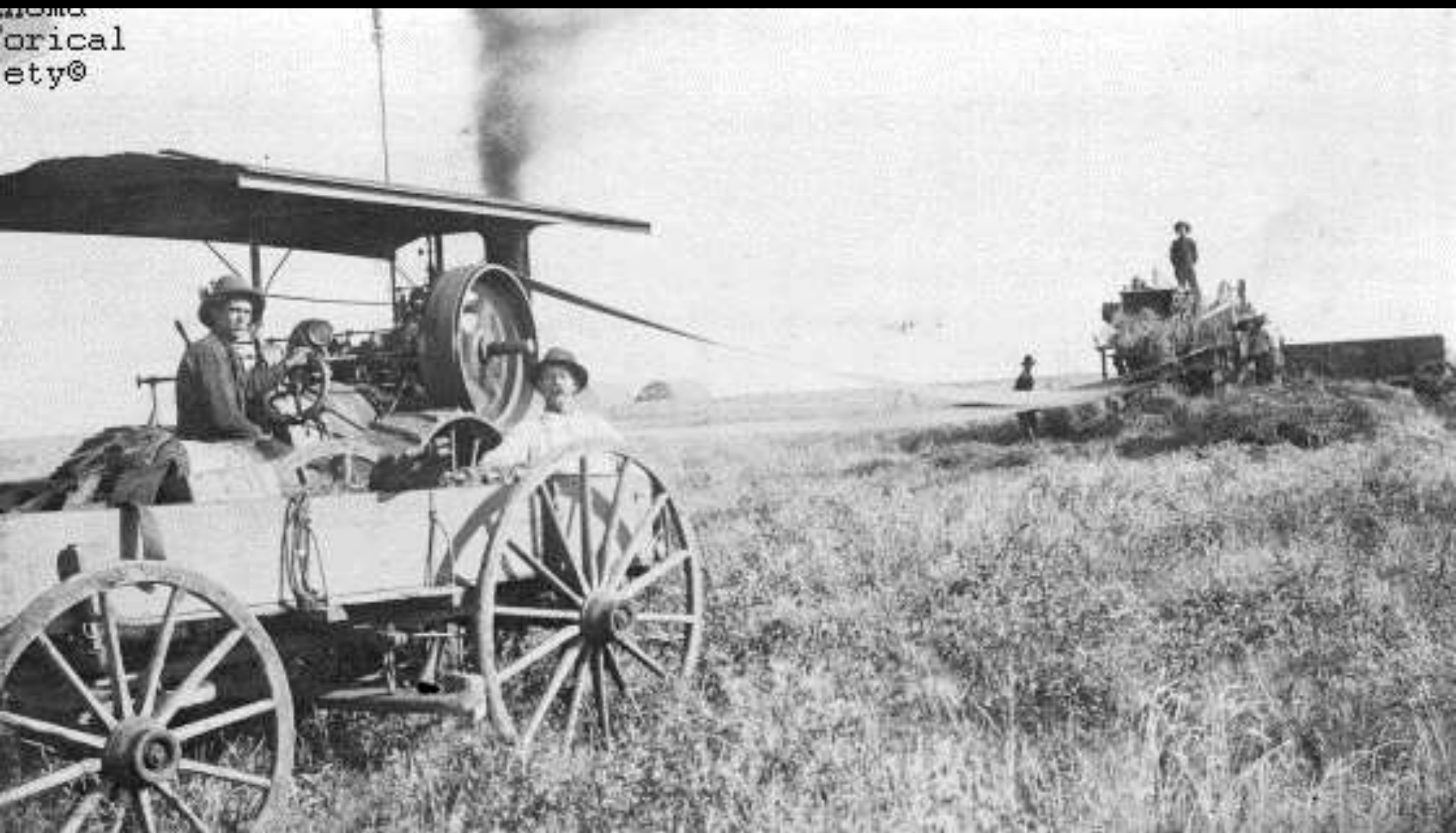
THE  
**THIRD**  
**INDUSTRIAL**  
**REVOLUTION**

HOW LATERAL POWER  
IS TRANSFORMING ENERGY,  
THE ECONOMY, AND THE WORLD



JEREMY RIFKIN

# First Industrial Revolution





# Second Industrial Revolution







# Third Industrial Revolution



# A world of driverless cars

Fully autonomous vehicles are developing faster than anyone would have thought a few years ago, with many experts predicting that they will become widely available in the next 5–10 years. Many questions remain, but it is already possible to imagine how this new world of driverless cars will work.

## PERCEPTION

Vehicles use radar to detect obstacles, a laser ranging system to map the surroundings in three dimensions, and video cameras to identify objects such as traffic lights, construction signs, pedestrians and other vehicles.

## DECISION AND ACTION

To make the appropriate responses to rare events — such as a ball bouncing in from a playground, or a plastic bag blowing down the roadway — the cars rely on algorithms refined through millions of kilometres of test drives.

## ADAPTIVE TRAFFIC FLOW

Smart infrastructure integrates V2V signals from the moving cars to optimize speed limits, traffic-light timing and the number of lanes in each direction on the basis of the actual traffic load. The result is a smoother flow, shorter travel time and less energy wasted at traffic lights or in traffic jams.

## ROUTE PLANNING

An on-board computer uses sensor data to plot a route that gets the car where it needs to go, while avoiding people, potholes and other vehicles.

## COMMUNICATION

Vehicle-to-vehicle (V2V) radios send signals between cars, trucks and infrastructure items such as traffic lights.

## LOCATION

Mapping software uses Global Positioning System data to tell the car where it is in relation to roads, traffic signals, and other landmarks.

# 2020s

The decade when driverless cars are predicted to become widespread.

# 10%

Fuel savings for cars that travel in formation.

## ROAD TRAINS

Vehicles can take advantage of aerodynamics and save fuel by following one another almost bumper to bumper. They are protected from catastrophic pile-ups by their V2V radios which allow all the cars in line to hit their brakes at the same time.

## CITIES TRANSFORMED

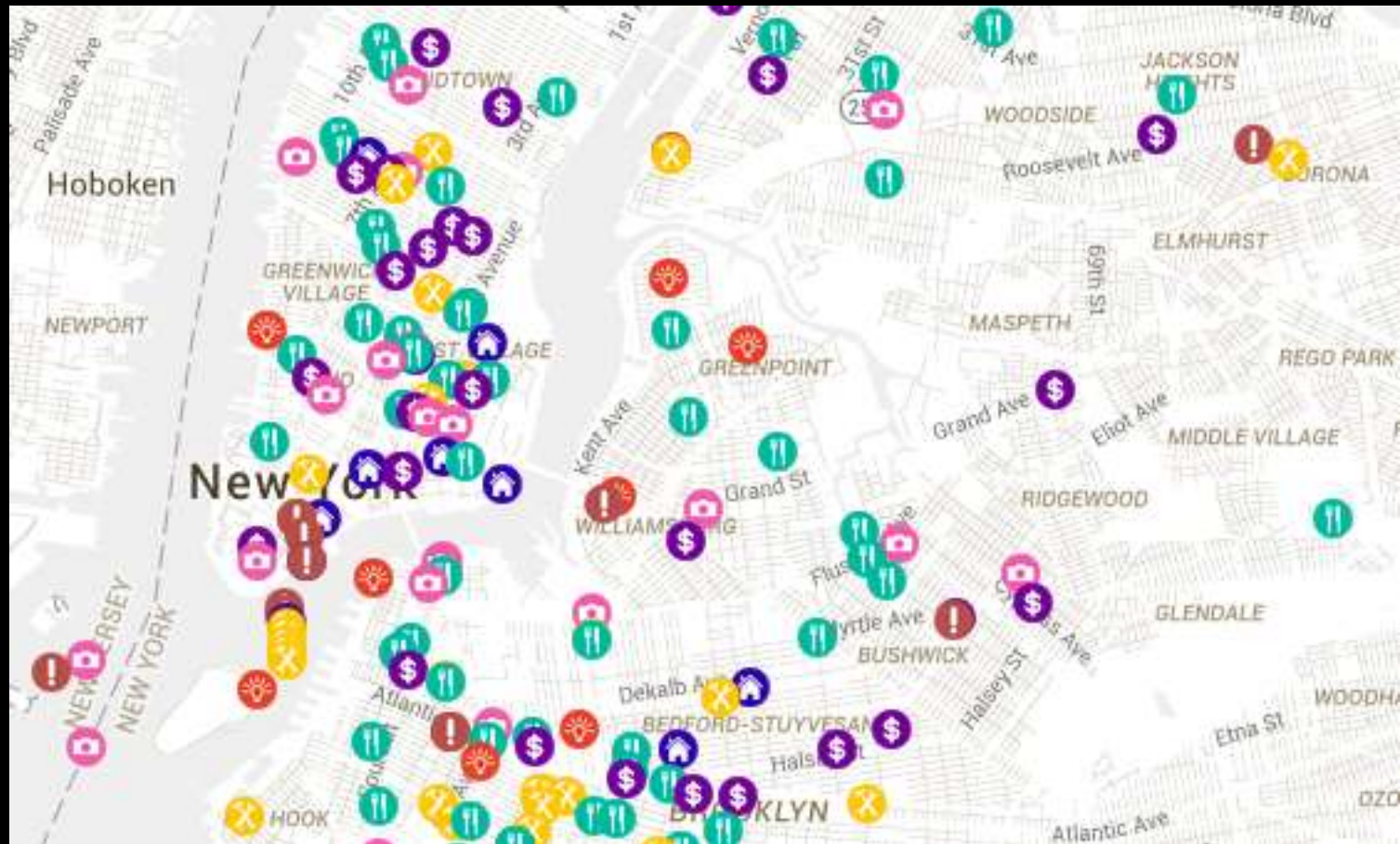
**MASS TRANSPORT** People increasingly give up owning cars in favour of calling companies to pick them up wherever they are and drop them off wherever they need to go — a driverless version of a ride-sharing service.

**LAND USE** Urban centres begin to undo the many accommodations they have made for personal vehicles — starting with the vast quantities of real estate devoted to parking, which could be adapted to more productive uses.

# 800 million

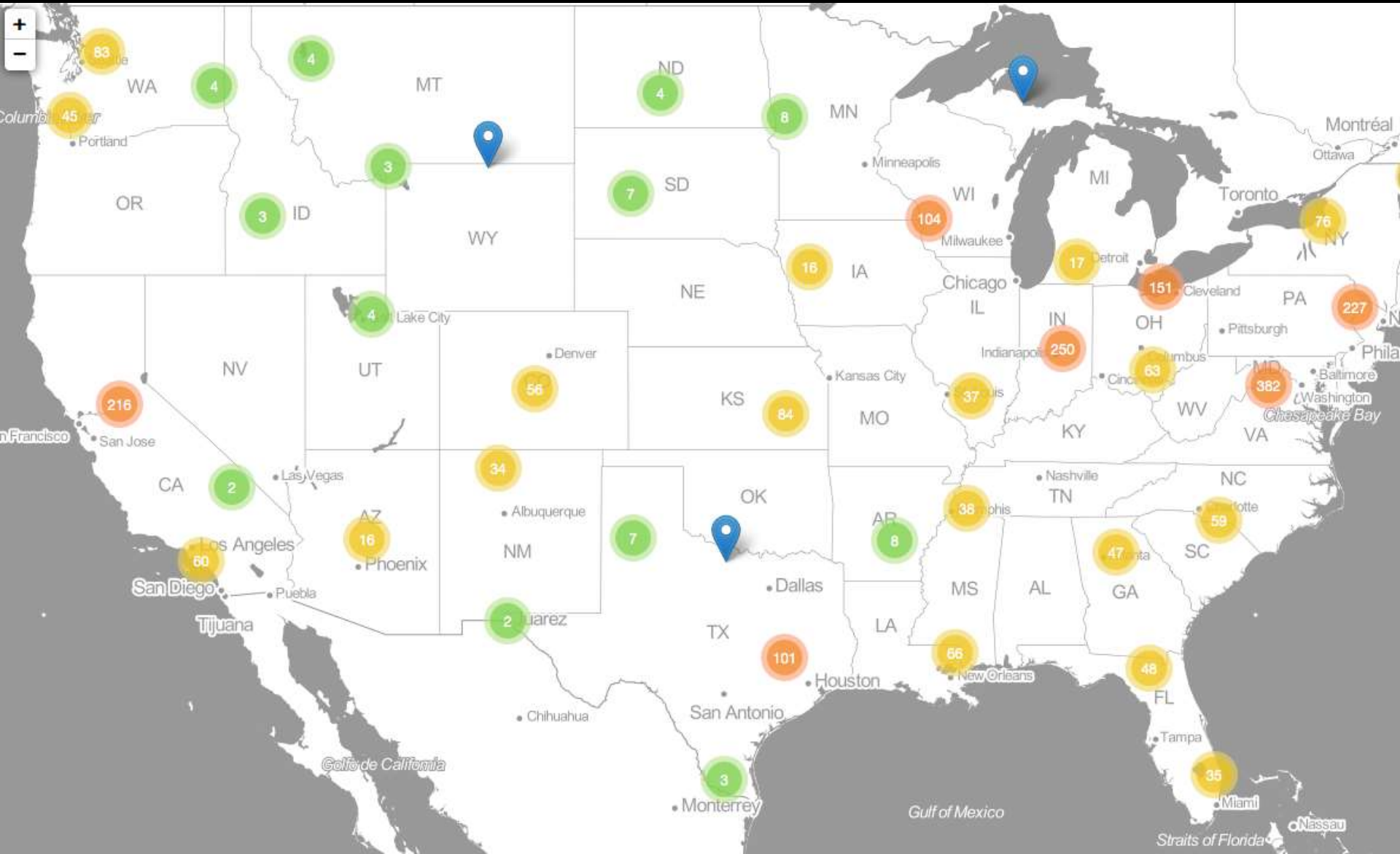
One estimate of the number of US parking spaces. Many could be used for other purposes if people ride-share more.

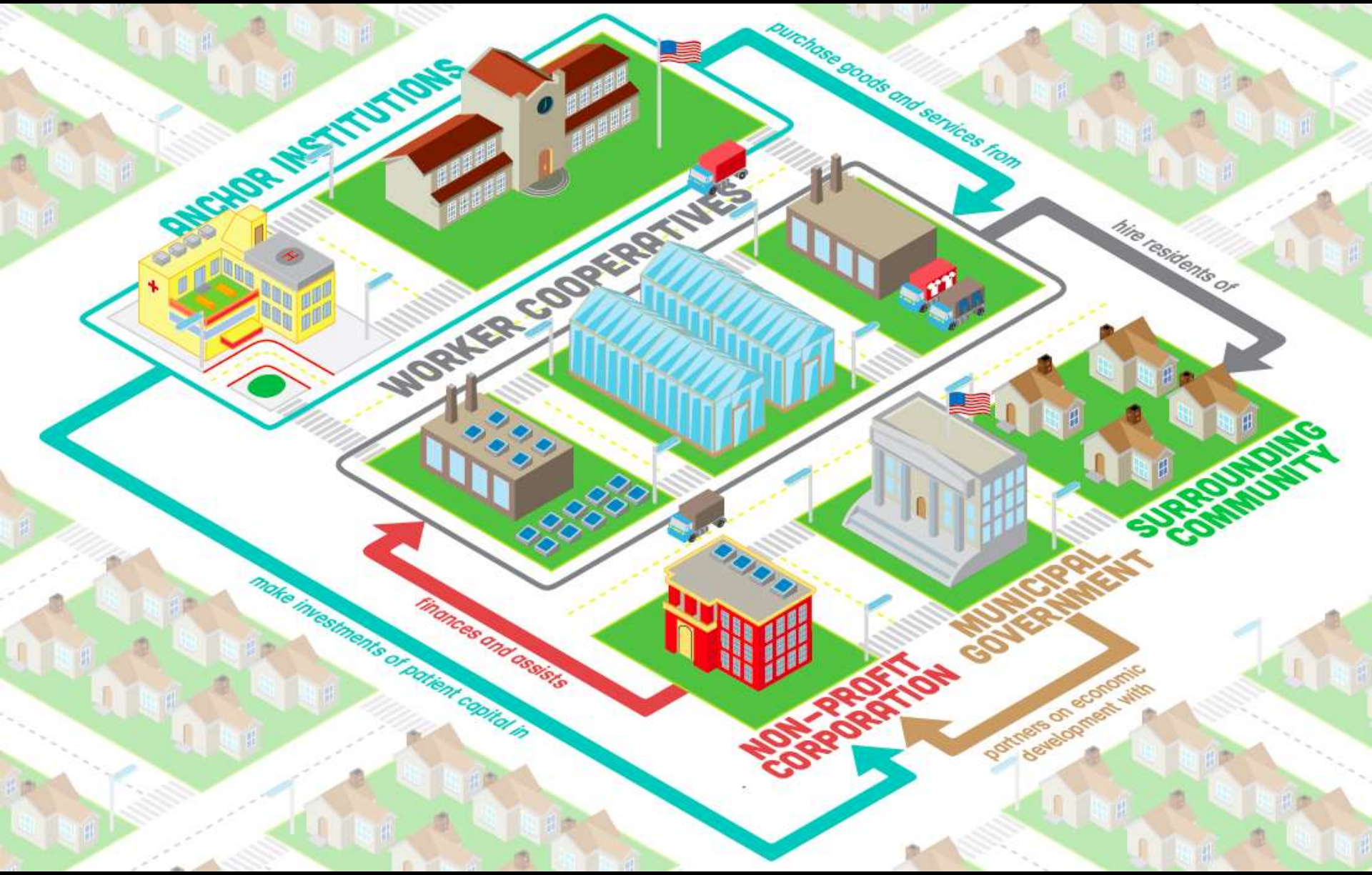
# Solidarity Economy





# Community Wealth Economy

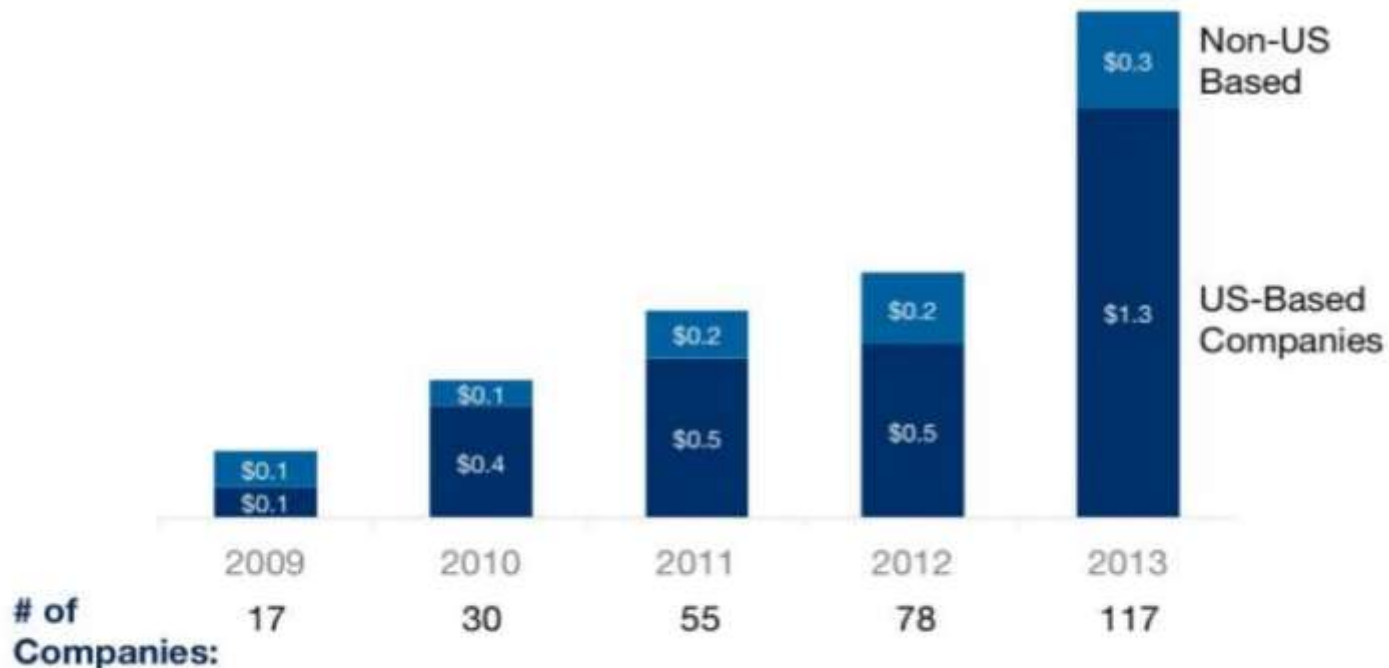




# Access Economy

- “Instant, pervasive access to goods and services without the burden of ownership or long-term commitment”

## VC Investment in ODE: Physical (\$B)





# You will never have to leave your home again!

**Available at the touch of a button**

**Mobile Device Repair:** Credid

**Florist:** BloomNation, BLOOM THAT

**Cleaning:** Handybook, HOMEJOY

**Laundry:** washio, RINSE, PRIM, delivery.com

**Car Repair:** FourMechanic, carbay

**Hair + Makeup:** manicube, TheStylished, StyleSeat, STYLOR

**Massage:** unwind.me, zeel

**Shipping:** sftyp

**Storage:** Clutter, HomeSpace

**Any Task/Errand:** TaskRabbit, thumbtack, Zaarly, Zillow

**Doctor:** Medicast

**Pet Care:** Rover, swifto, BarkCare

**Home Improvement:** HomeAdvisor, HOUSECALL, clublocal

**Snow Plow:** plowme

- Can book pretty much any local service or product!

# Sharing Economy Cities

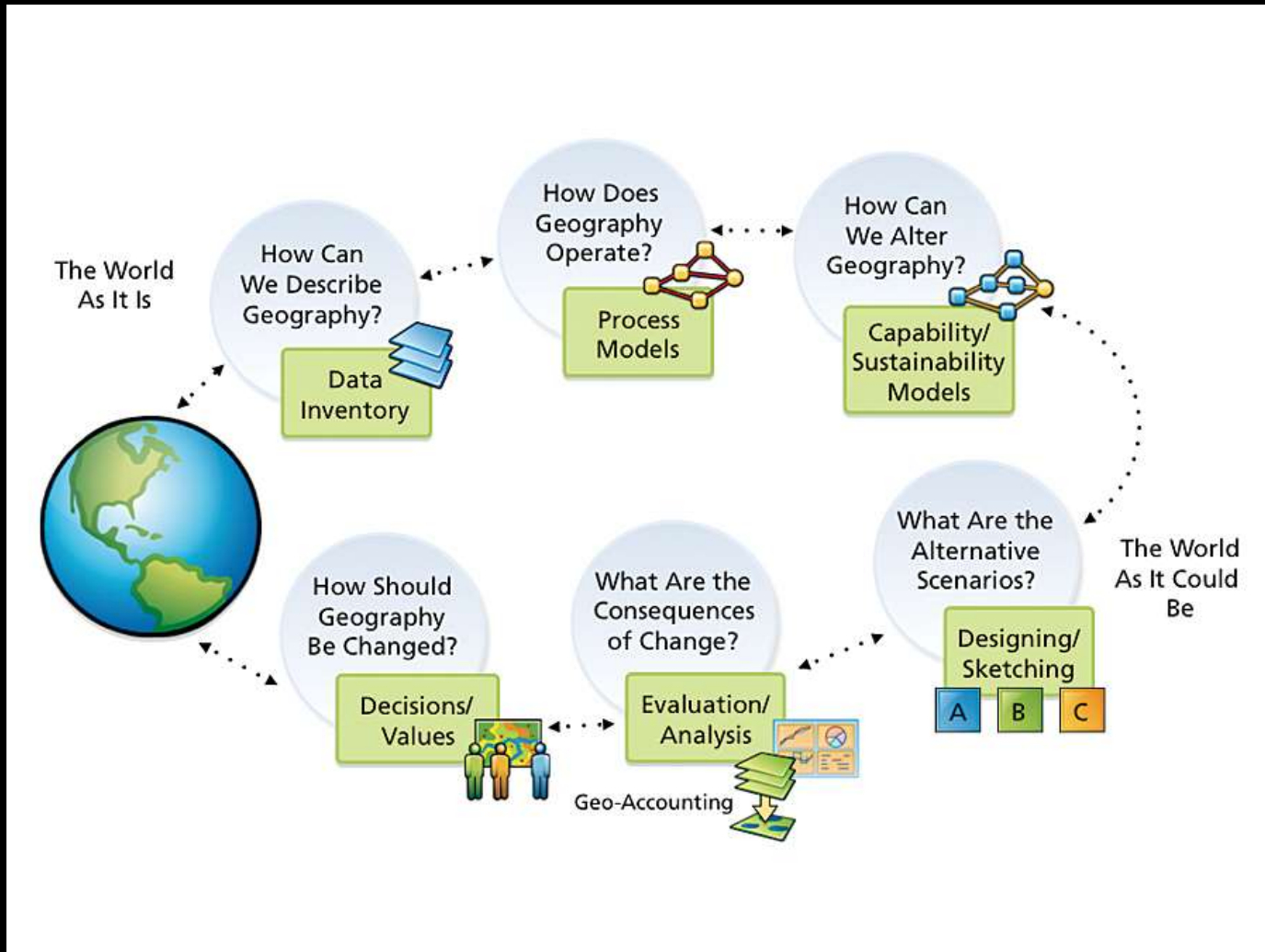
NATIONAL LEAGUE  
of CITIES | CENTER  
FOR CITY SOLUTIONS  
AND APPLIED RESEARCH

## CITIES, THE SHARING ECONOMY and WHAT'S NEXT





# GeoDesigning our Future





DESIGNING  
OUR WAY  
TO A BETTER  
WORLD

THOMAS FISHER