DOUGHNUT ECONOMICS
Seven Ways to Think Like a 21st-Century Economist
KATE RAWORTH
@KateRaworth
20th century economics

The first image

The selfie

The goal

(price, supply, demand, quantity, GDP, time)
Those attempting to guide the economy and our societies are like pilots trying to steer without a reliable compass.

– Joseph Stiglitz & Amartya Sen 2009
The long view on human well-being

Home sweet home in the Holocene. The graph shows Earth’s changing temperature over the past 100,000 years, based on data from the Greenland ice core. The last 12,000 years have been unusually stable.\textsuperscript{2e}
Human prosperity in the 21st century
The state of humanity and our planetary home

- Climate change 'hitting harder and sooner' than forecast
- Ocean acidification to hit levels not seen in 14 million years
- Research finds humans across the globe have microplastics in their stool
- Richest 1% own half the world's wealth
- Humans have wiped out 60% of animals since 1970, says WWF
- Phosphorus pollution reaching dangerous levels worldwide
- Land degradation threatens human wellbeing, major report warns
- Water shortages could affect 5bn people by 2050, UN report warns

- 90% of world's children are breathing toxic air, study finds
Meeting the needs of all within the means of the planet.
How can our city be a home to thriving people in this thriving place, while respecting the wellbeing of all people and the health of the whole planet?

The Thriving Cities Initiative
**FOUR LENSES OF THE CITY PORTRAIT**

<table>
<thead>
<tr>
<th>LOCAL</th>
<th>SOCIAL</th>
<th>ECOLOGICAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>What would it mean for the people of this city to thrive?</td>
<td>What would it mean for this city to thrive within its natural habitat?</td>
</tr>
<tr>
<td>GLOBAL</td>
<td>What is this city’s impact on the wellbeing of people worldwide?</td>
<td>What is this city’s impact on the health of the whole planet?</td>
</tr>
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</table>
Workshops for city officials and community representatives in Philadelphia, Portland, Amsterdam
The Embedded Economy

EARTH

living matter
& materials

SOCIETY

ECONOMY

household

market

financial
flows

state

commons

ECONOMY

market

financial
flows

 commons

state

SOCIETY

living matter
& materials

EARTH

solar
energy

energy

waste
matter

waste heat

heat
Reclaiming our many economic identities

- Belonging
- Identity
- Understanding
- Protection
- Purpose
- Freedom
- Creativity
- Leisure
- Participation
Monopoly
It teaches you to win by hoarding property and extracting rent until you are the only player left in the game. So 20\textsuperscript{th} century.

Pandemic
It teaches you to win by collaborating with all to rid the world of disease, so that everyone is left in the game. So 21\textsuperscript{st} century.
REGENERATIVE

Restore & work within the cycles of the living world

- Run on renewables
- Waste = food
- Modular design
- Ownership to service

Diagram:
- TAKE
  - renewable materials
  - biological nutrients
  - technical nutrients
- MAKE
- CONSUME
  - minimise lost matter and heat
- USE
- RESTORE
  - repair
  - reuse
  - refurbish
  - recycle

REGENERATE
- and capture value at each stage of decomposition
CIRCL – Amsterdam
‘click open’ modular design
Degenerative
- Smokestacks
- Take make waste
- Carbon intensive products
- Disconnected supply chain

Sustainable
- Factories to zero
- Closed loop materials
- Low carbon products
- Sustainable supply chain

Regenerative
- Factories as forests
- Products from dispersed materials
- Products that sequester carbon
- Distributive supply chain
Interface Carpets
Mission Zero by 2020

- zero waste to landfill
- zero fossil fuel energy use
- zero process water use
- zero GHG emissions
Interface Carpets 2015

Carpet nylon from reclaimed fishing nets
Philippines, Cameroon

Carpet backing that stores more carbon that it emits over its lifetime

Regenerative

Factories as forests
Products from dispersed materials
Products that sequester carbon
Distributive supply chain

CircuitBac Green
Backing Construction
By mimicking the ecological generosity of the wild land next door, we can create buildings that:

- Sequester carbon
- Store groundwater
- Purify the air
- Create soil
- Cool the climate
- House biodiversity

These buildings should be designed to:

- Factories as forests
- Products from dispersed materials
- Products that sequester carbon
- Distributive supply chain

Nearby forest:

- Sequesters carbon
- Stores groundwater
- Purifies the air
- Creates soil
- Cools the climate
- Houses biodiversity

How can the factory:

- Sequester carbon
- Store groundwater
- Purify the air
- Create soil
- Cool the climate
- House biodiversity

Create buildings that mimic and match the ecological generosity of the wild land next door.
What if all architecture and construction aimed to be regenerative?

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<tr>
<th>Degenerative</th>
<th>Sustainable</th>
<th>Regenerative</th>
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Can we design our way into the Doughnut?

It depends on the design of business itself.
Extractive enterprise

How much financial value can we extract from this enterprise?

Regenerative enterprise

How many benefits can we generate in the way we design this enterprise?

Kelly 2012
Extractive enterprise

Generative enterprise

Purpose

Denmark’s biggest energy company is completely abandoning fossil fuels

Kelly (2012)
Purposes and Networks

Extractive enterprise

- Customers
- Suppliers
- Industry ecosystem

Generative enterprise

- Customers
- Suppliers
- Industry ecosystem
PURPOSE

Extractive enterprise

Leave outdated ones

AFPM
American Fuel & Petrochemical Manufacturers

Generative enterprise

Join new alliances

CE100
RE 100
Fair Tax
Extractive enterprise

Generative enterprise

Purpos

Networks

Governance

'Quarter is King'
- growing sales
- growing profits
- growing market share

Unilever's Paul Polman: 'How to be a Good Slave'
- Principles & practices
- Metrics & incentives
- Culture & norms

Corporation

Triodos Bank
Extractive enterprise

Generative enterprise

Purposes

Networks

Governance

Ownership

Finance

Fast & financial

Long & purposeful
Which design traits are drawing your enterprise back into extractive mode?

Which design traits will enable your enterprise to become regenerative?
20th century economics

The first image

[Graph showing supply and demand curves with price on the y-axis and quantity on the x-axis]

The selfie

[Image of a pyramid with different animals at each level, with GDP and time on the axes]

The goal

[Chart showing a trend line with GDP increasing over time]
The first image

21\textsuperscript{st} century economics

The selfie

The goal