Reimagining the future: The biomimetic economy
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Reimagining the Future

The Biomimetic Economy

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MDes, Strategic Foresight & Innovation
What is Biomimicry?

A science that studies nature's models and then uses these designs and processes to solve human problems.
Why Biomimicry?

Nature has been dealing with dynamic change for more than 3.8 billion years.
Research Purpose

Explore how Biomimicry design principals can be applied to our economic system.
The Challenge

Businesses today are poorly prepared to deal with unexpected adverse social, environmental, and economic impacts.
Reimagining the Future: The Biomimetic Economy

Biomimicry

The principle of succession

Type I System: A Dandelion Weed (Currently Us)

Type II System: A System that Operates to the Symbiotic Cycles of a System

Type III System: An old growth forest

S-Curves Gives Linear Growth

Panarchy

The Principle of Succession

Sharing/Circular Economy

Eco-Efficient Business

$1 trillion in business opportunities.

Economic development based on cyclical economics, such as sharing and collaborating with others to achieve common goals.
Design Principles

- Resilience
- Optimizing
- Adaptive
- Systems Based
- Value Based
- Life Supporting

Source: Biomimicry for Creative Innovation (BCI)
Three Horizons

Source: Anthony Hodgson
Type I System

S-Curves Gives Linear Growth
Type II System

Panarchy

Type II
K-Species:
Operate at or near the carrying capacity of a system
Type III System

Type III: Mature - Complex Systems
Kalundborg Ecopark

First full realization of industrial symbiosis. Companies collaborate to virtually eliminate waste, and use the by-products and waste as net new input.
Circular Economy

New way of thinking about material flows, production and patterns of consumption.
Underutilized Assets

1.3 billion tonnes of food per year are wasted.

25% of clothing goes unworn in an average closet in North America.

Private cars sit idle for 95% of their time.

The average power drill, gets 12 minutes of use over the course of its life.
$1 trillion in business opportunities.

(Includes material savings, increased productivity, new jobs and creation of new product and business categories.)

- Ellen MacArthur Foundation featuring analysis from McKinsey.
Diverse Economies

In nature, successful ecosystems expand through diversity. Diverse economies also expand in a rich environment, created by diverse use and reuse of goods and services.
Import Stretching

New value is added to an existing good or “import” and is turned into a new product for export.

Adapted from Jacobs, J., 2000
Case Study

Rent your jeans for a year, after that you have 3 options: 1) keep it, 2) switch it, 3) send back.
Import Replacement

Developing capacity to make things locally that used to be imported from afar.
Case Study

Icelandic company using fish scales for fashion forward shoes and clothing.
Three Horizons

Source: Anthony Hodgson
Next Steps

• Rethinking product design and production
• Fostering collaborative relationships across value chains
• Socializing new modes of consumption
"Look deep into nature, and then you will understand everything better."

- Albert Einstein
Thank You!

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