



ResilieNtWEB
Innovate for a sustainable business

Investing in Opportunities



This project has received
European Regional
Development Funding
through INTERREG IV B.



INTERREG IVB

Resilience Design Toolkit – introduction

Aider les PME à devenir plus résilientes en imitant les principes d'innovation de la nature.

LIST – June 2015

bertrand.gregoire, paula.hild, prune.gautier @list.lu

plus d'informations: <http://resilientweb.eu>



est-ce le bon ?

comment faire ?

appliquer un bon principe c'est bien, mais...

est-ce assez ?





comment voler sans ravitaillement ?



barge rousse
(bar-tailed godwit)

vol de 8 à 10 jours





Biomimétisme

“ Imiter la nature pour innover durablement ”



Origines du biomimétisme



Conceptualisation du biomimétisme



1997, premier livre

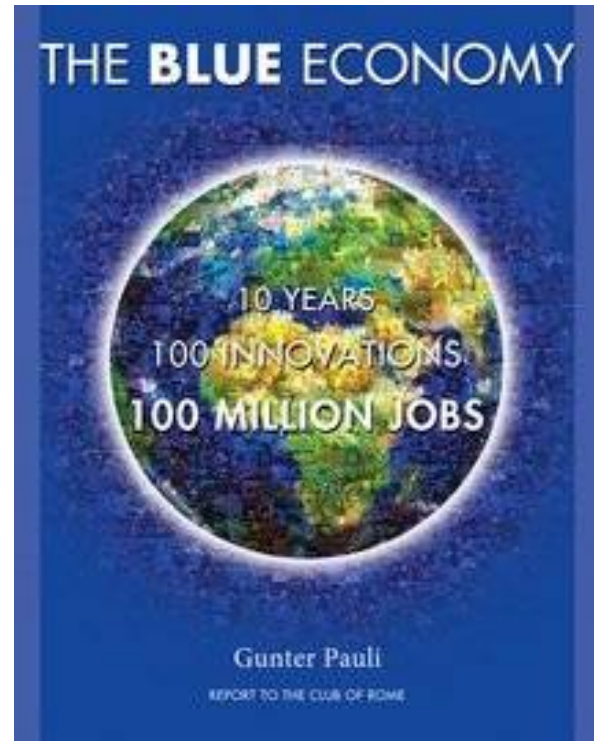


2011, version française

« Biomimicry »: Janine Benyus

L'économie Bleue

*Répondre aux besoins de base de tous **avec ce que nous avons**. Cela nécessite de concevoir une nouvelle économie qui fait **cascader les ressources** d'une activité à l'autre. Son but est de créer des emplois et reconstruire le capital social tout en régénérant l'environnement.*



The Blue Economy: Gunter Pauli, 2010



« The architect of the future will build imitating Nature, for it is the most rational, long-lasting and economical of all methods. » Antonio Gaudi

“ On ne peut pas résoudre un problème avec le même type de pensée que celle qui l'a créé. ”

Albert Einstein

“Face au monde qui change, il vaut mieux penser le changement de changer le pansement.”

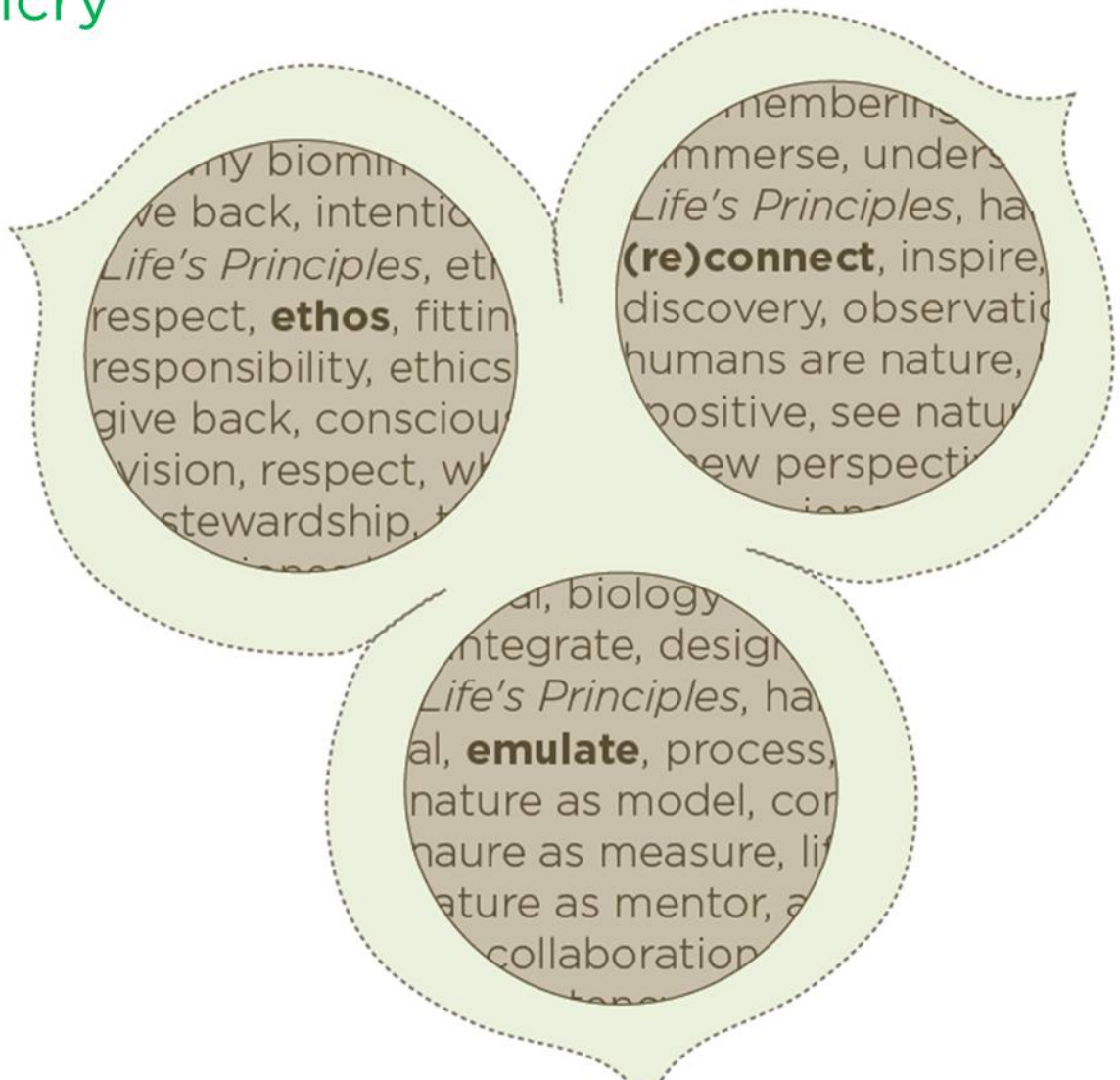
Francis Blanche

“ Va prendre tes leçons dans la Nature. ”

Léonard de Vinci

Les trois dimensions du biomimétisme

seeds of biomimicry



mais



- Nous ne sommes pas tous biologistes!
- Le Resilience Design Toolkit interprète certains des principes d'innovation de la nature en termes de management, pour vous!



**Resilience
Design
Toolkit**

- Un aide pour se poser la question:
Dans ce cas précis, que ferait la Nature ?

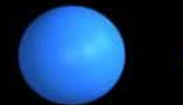
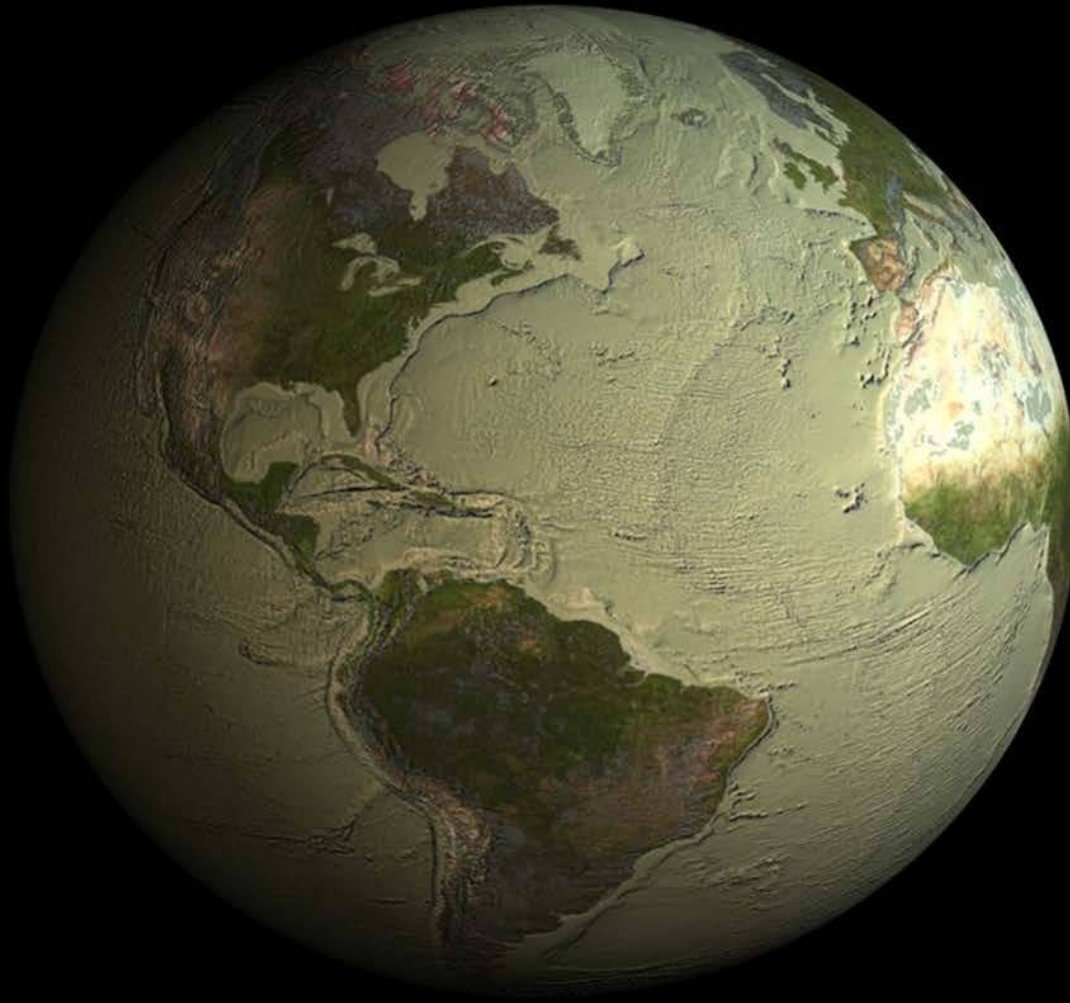


Dans ce cas précis, que ferait la Nature ?



Dans ce cas précis, que ferait la Nature ?

La Terre est...



Source: Neil Adam

... sujette à des limites

La Terre est...

Resilience
Design
Toolkit



... un système fermé pour la matière

Greenloop

La Terre est...



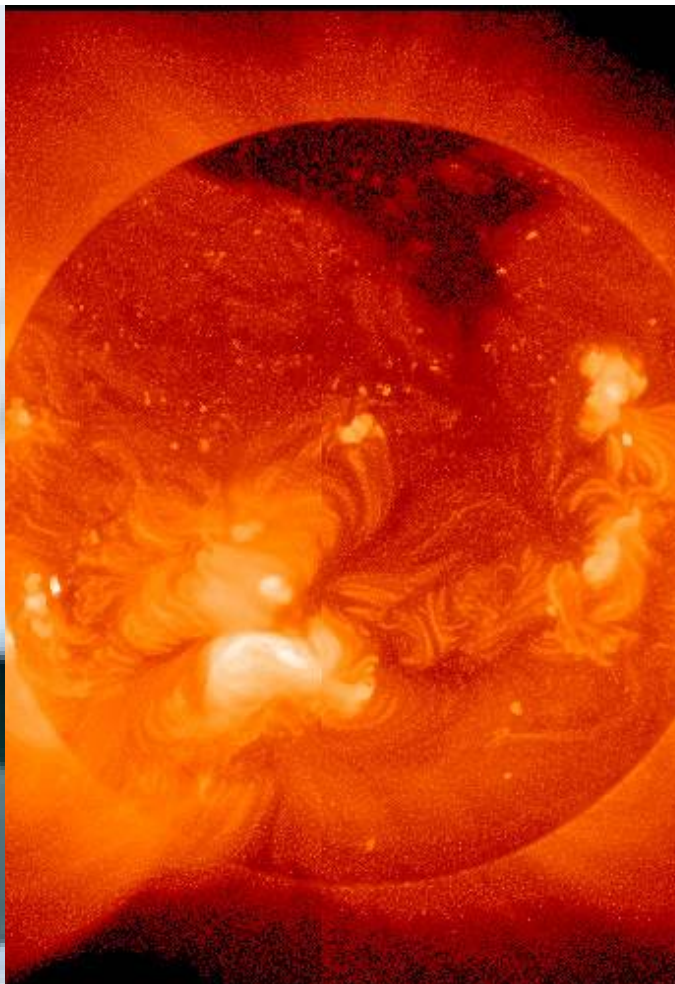
... basée sur l'eau

La Terre est...



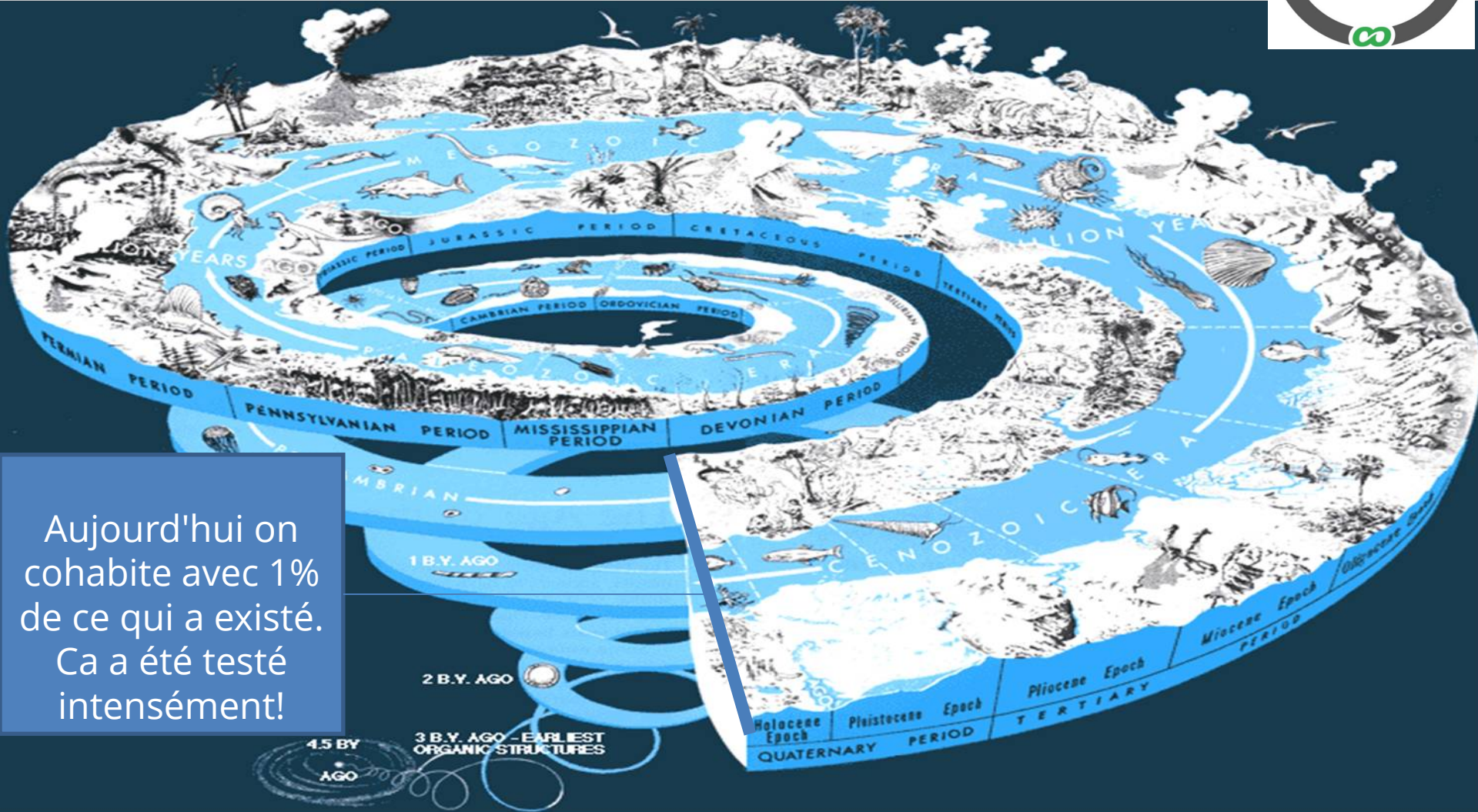
... continuellement en déséquilibres dynamiques

La Terre offre...



des énergies gratuites

La Vie sur Terre...



Aujourd'hui on cohabite avec 1% de ce qui a existé. Ca a été testé intensément!

... est le design de 3,8 milliards d'années de R&D

La Vie sur Terre...



... est résiliente

✓ *est-ce le bon ?*

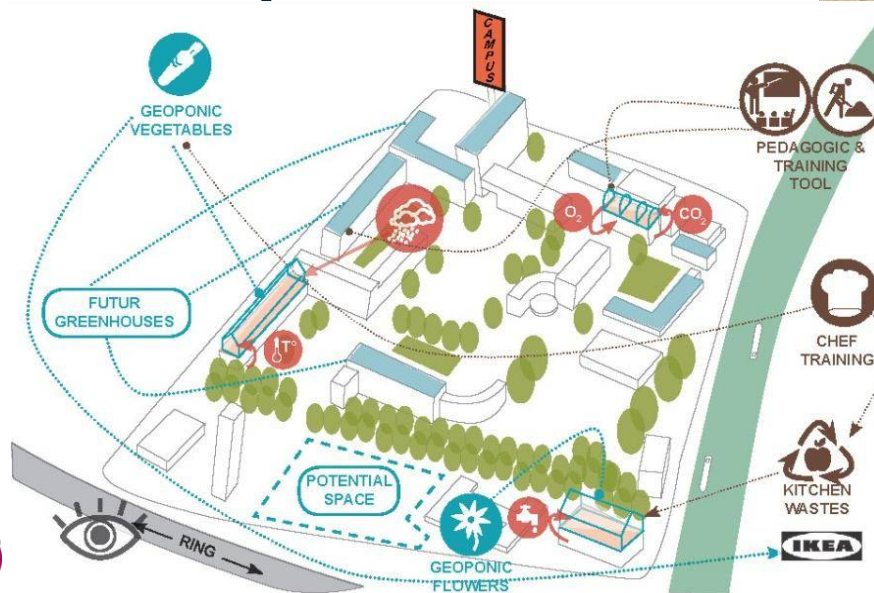
comment faire ?

appliquer un bon principe c'est bien, mais...

est-ce assez ?



- qui comprend et assume les conséquences de ses activités
- qui construit de la valeur économique, sociale et environnementale
- penser au/en **système**



Quelques stratégies "royales"



Certaines pistes semblent avoir beaucoup d'avantages



Optimisation

like a slime mold

The slime mold is a master at optimisation. While exploring nearby food sources, it grows a nearly perfect network for the internal distribution of nutrients. Not bad for a blind organism without a nervous system.



Functionality, not ownership

like a hermit crab

Did you know the hermit crab doesn't build its own shell, it merely uses abandoned ones, as the animal grows bigger it trades 'houses' with other crabs.



Circularity

like a ...

Lorem ipsum dolor sit amet, cu homero commodo feugiat mea, sea regione vivendo eu. Purto albucius an ius. An erroribus dignissim eos, graece honestatis quaerendum no mei, ne usu velit nulla. Et liber solet nostro sit, eam at agam erat.



Cocreation

like the goby fish & snapping shrimp

This unlikely couple works together to build their shared house. The shrimp is blind and vulnerable to attacks. While it builds a new shelter, the fish stays close and act as an alarm. Once the house is built, they share it.



Substitution with renewables

like an oriental hornet

The activity of the oriental hornet is related to the intensity of sunlight. Indeed, they are able to harvest light, and transform it in electricity to boost their metabolism.



Impact entrepreneurship

like forest and mycelium



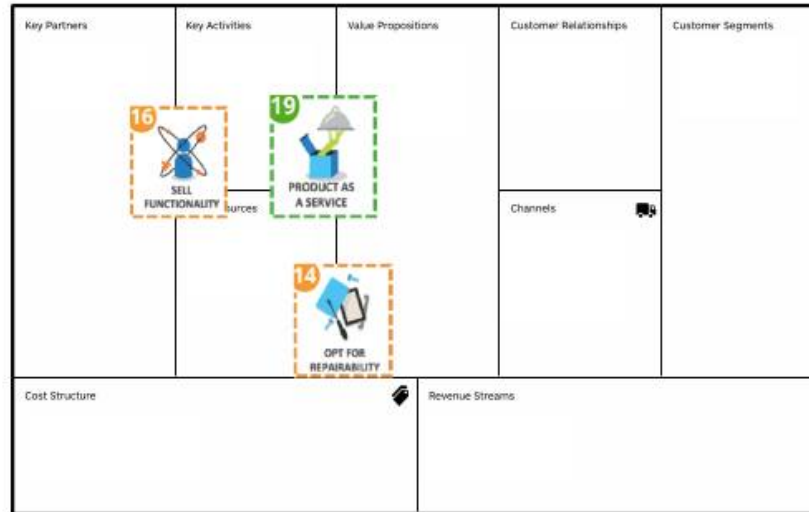


Functionality, not ownership

Switching to renewable material and energy sources reduces environmental impacts and increase business resilience



Tapazz is a car **renting system**. Pretty conventional you might think, well have you ever rent your **neighbour's car**? If you have a car that is not often used or if you do not want to buy one, this web site is for you.



Share some sugar is an website that helps you find someone in your **neighbourhood** who is willing to lend you something you need. **Why buy when you can borrow ?**



Totalboox is an **app** for tablets. It enables you to download free any books you want, you only **pay** for the pages you read. Those pages are then yours and you can access them as you wish.



Mud Jeans is a company that **leases it's jeans**. The customers buy the products but the raw material, the cotton, is owned by Mud Jeans. They ensure that the products is usable as long as possible by designing **durable products** and **repair** them free of charges.

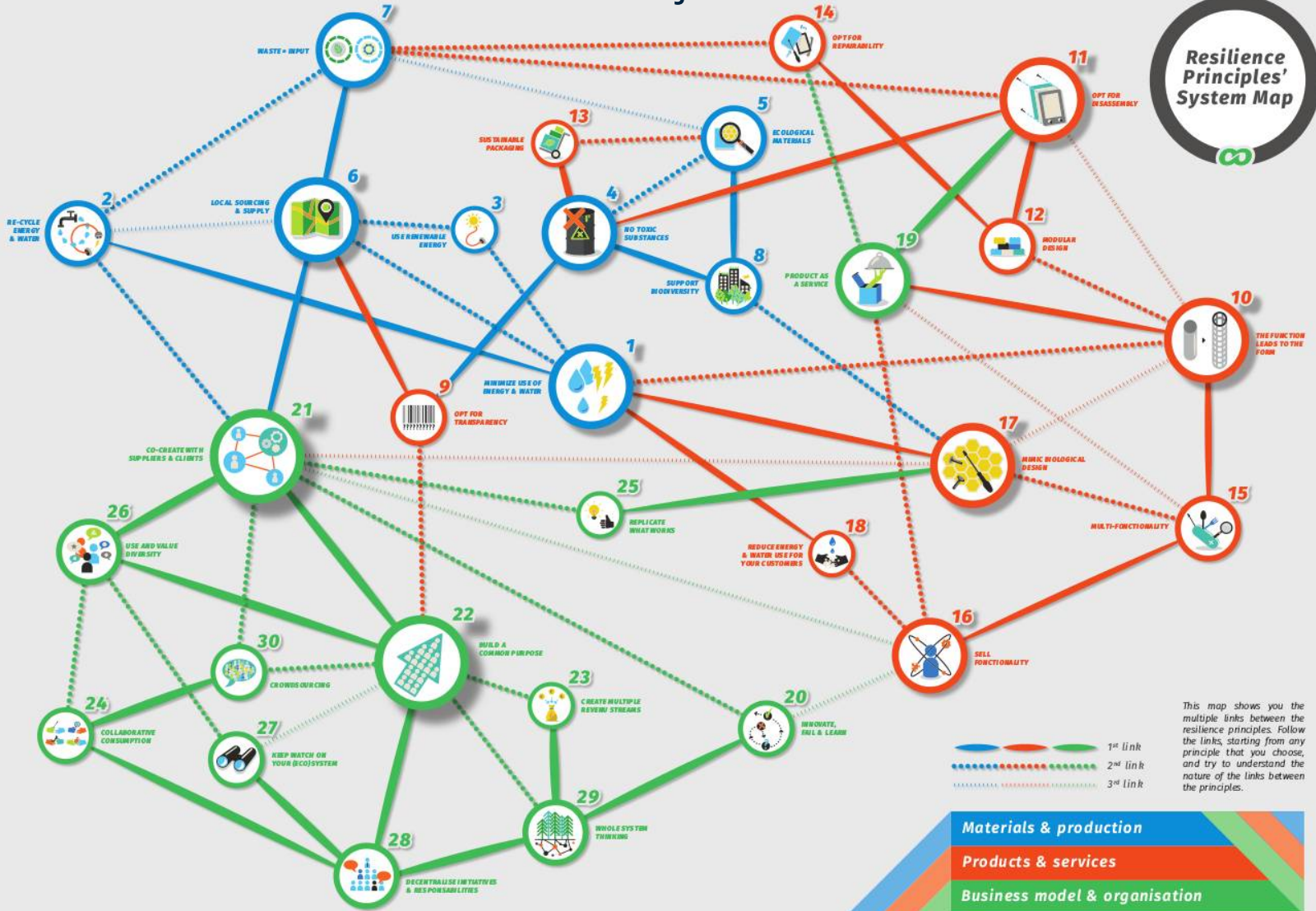


Hilti is the world leading company in professional building tools. They propose a service of "**fleet management**" for the ones who don't want to own those machinery. They replace, repair, recalibrate and update them as much as they need to be for a fixed monthly price.



démarche continue

élargir les horizons ET focaliser sur une trajectoire d'innovation



✓ *est-ce le bon ?*

comment faire ?

appliquer un bon principe c'est bien, mais...

✓ *est-ce assez ?*



Resilience Design Toolkit

1

Business Model Canvas

The Business Model Canvas is an open source tool for sketching business models.



30

Resilience Design Magnets

The post-it sizes magnets help you map your idea's on the Business Model Canvas.

1

Resilience Principles Map

All the resilience principles and their connections in one single map.



30

Resilience Design Cards

Each card features a Resilience Design Principle. Go to page 18 for more details.

1

Online repository of inspiring business examples

Go to short.resilientweb.eu/repository

Focus sur les Cartes

1 There are **3 types of cards** Products & Services, Materials & Processes and Finance & Organisation.

2 **Links to other cards** that are worthwhile considering



15 multi-functionality

Meet multiple needs and fulfil multiple functions with your product or service

product & services

Can our product help solve multiple problems? Could we better fit the form of our product or service for different functions? Could our partners fulfil different functions for us?

Could our distribution channels serve different purposes? Could our products serve different functions during its lifetime?

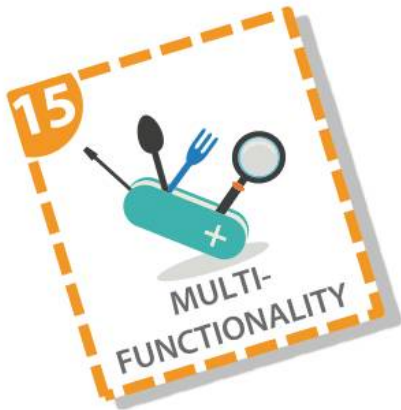
see also cards 16, 17, 18, 19



3 Suggestions to blocks of the **Business Model Canvas** where you could apply the principle

4 **Probing questions** for your business. Are we...? Could we maybe...?

Focus sur les Cartes



5 A business example that illustrates the resilience principle



15 multi-functionality

benefits

-  Multi-functionality can be a way to enhance your value proposition and **ATTRACT NEW CUSTOMERS**.
-  A multi-functional good can **ENHANCE CUSTOMER LOYALTY** by offering a more customised service or product.

According to the 17th CEO Survey of PwC most CEOs agree that business has social as well as Financial responsibilities. Over three-quarters think that satisfying wider societal needs and protecting the interests of future generations is important to their business.

scan this code or follow the short url to find more inspiring cases and dedicated tools!  <http://bit.ly/multi-functionality>

Doing more with the same

The multifunctional offices spaces from DIRT (Doing it Right This Time) fulfil a multitude of different roles in their lifetime. Their modular and interchangeable design blocks make it possible to convert office space used over time.



ResilieNtWEB is funded by the Luxembourg Government in support of the 'Innovation Carriers' and 'Innovation Hubs' initiatives. For more information, visit www.resilienweb.lu



6 Possible benefits for your business

7 Scan the QR code and visit the online repository with more inspiring business cases and helpful tools.



Focus sur le Business Model Canvas

HOW?

Key Partners

Key partners make up the network that surround the business and make its activities possible.

Key Activities

The acts the company must take for its business model to work.

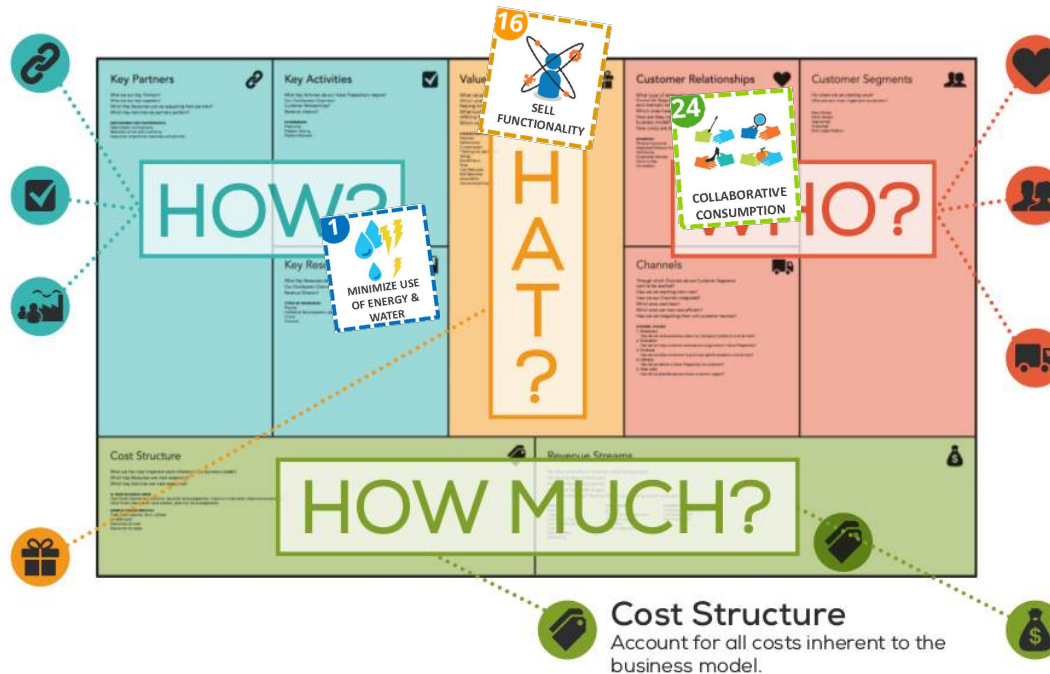
Key Resources

The assets that are essential for producing the value proposition.

WHAT?

Value Proposition

It seeks to solve customer problems and satisfy needs with value propositions. Something useful for the customer that the organization can deliver.



WHO?

Customer Relationships

The type of customer relationship will deeply influence the customer experience.

Customer Segments

An organization serves one or several Customer Segments. Grouped by needs, relationship, interests, profit and distribution channel.

Channels

Value propositions are delivered through communication, distribution and sales Channels. How the organization's value proposition reaches the customer.

HOW MUCH?

Cost Structure

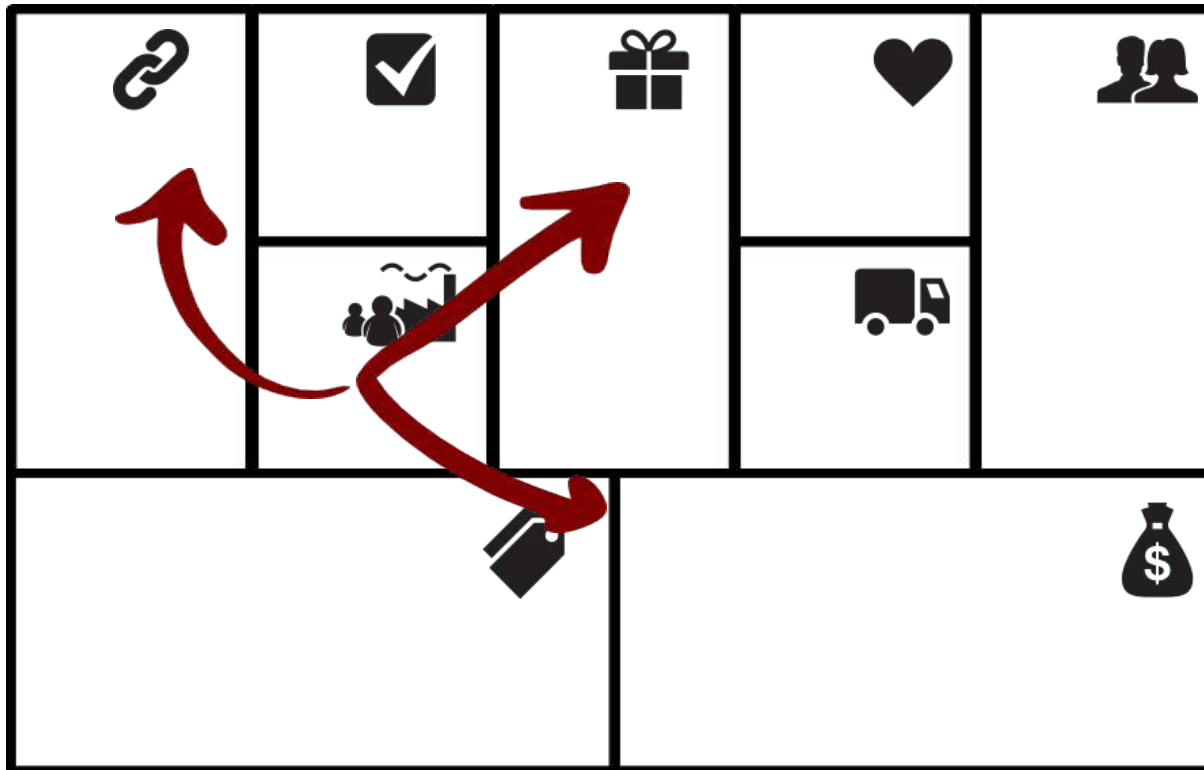
Account for all costs inherent to the business model.

Revenue Streams

The customer section generates cash for the business.

Focus sur le Business Model Canvas

- Testez vos hypothèses, envisagez les liens et conséquences, validez ou améliorez!



Focus sur des techniques proposées

● #3: Power Build

1 - WHAT DO WE DO BEST?



Divide the cards in two piles: one pile with those cards that you are already putting in action, and one pile of cards that you are not.

Select maximum 3 cards from the first pile that you believe you do best; in which of these design principles are you really good?

2 - MAP YOUR STRENGTHS



Take a magnet for one of the 3 cards you just picked. Take a step back and place the magnet within the BMC block that best applies to it.

Explain. Place one or several post-its around the magnet and explain in a few words or with a small drawing how you are applying this design principle with success.

3 - BUILD!



Now take another magnet of the same card and see how you could apply the same principle elsewhere on the BMC. Brainstorm and note again your idea's.

Repeat the same process for the other two cards that you picked.

Have a look at the Resilience Principles Map, can you find other cards that could help you?

4 - FOCUS YOUR EFFORTS



Take a step back and select the 3 best ideas that you believe merit further attention. Ask yourself whether you have the right competences and resources available in your company. What do you miss? Who can help us?

Make a plan: discuss for each idea how you could most easily test it; in a cheap and quick way. Create a simple action plan for the next three weeks.

Focus sur des techniques proposées

● #1: Discover!

1 RANDOM PICK



Everyone has 3 minutes to pick 3 cards at random, elect one that he/she is personally more attracted to, discard the others and think of a few arguments to foster this principle in the organisation.

2 EXPLAIN



In turns of 3 minutes each, explain to the others why you like that principle and what great impact it could have on your organisation.

After all pitches, everyone gets to invest his/her 5 poker chips in developing any principle (own or other's).

3 PRIORITIZE



Put the principle that gets more cash at the centre of the group and find together

a) one potential quick win to show the greatness of the principle to your colleagues in the next 2 weeks

b) one long term opportunity that would favour your business by implementing the principle

4 EXECUTE



Do the a) and talk the b) over tomorrow again after a good night of sleep and a chat about that idea with your 6-year-old kid / wife / friendly neighbour who has no clue.



Focus sur le repository



Un support plus riche que les cartes, en ligne, par exemple : <http://short.resilientweb.eu/recycle>

recycle

PRINCIPLE



Re-Cycle Energy & Water

re-cycle your own or others' excess energy & water

Do we re-use our waste energy or water in-house? Do we have an idea of how much we could re-cycle?

Could our neighbouring businesses or partners re-use it? Could we use water in a closed loop? Could we recover rain water for a specific usage?

Get some inspiration!

See how *The Eco-machine* and [others] did it by following the 'examples' connections.

materials+production cost resilience start

EN

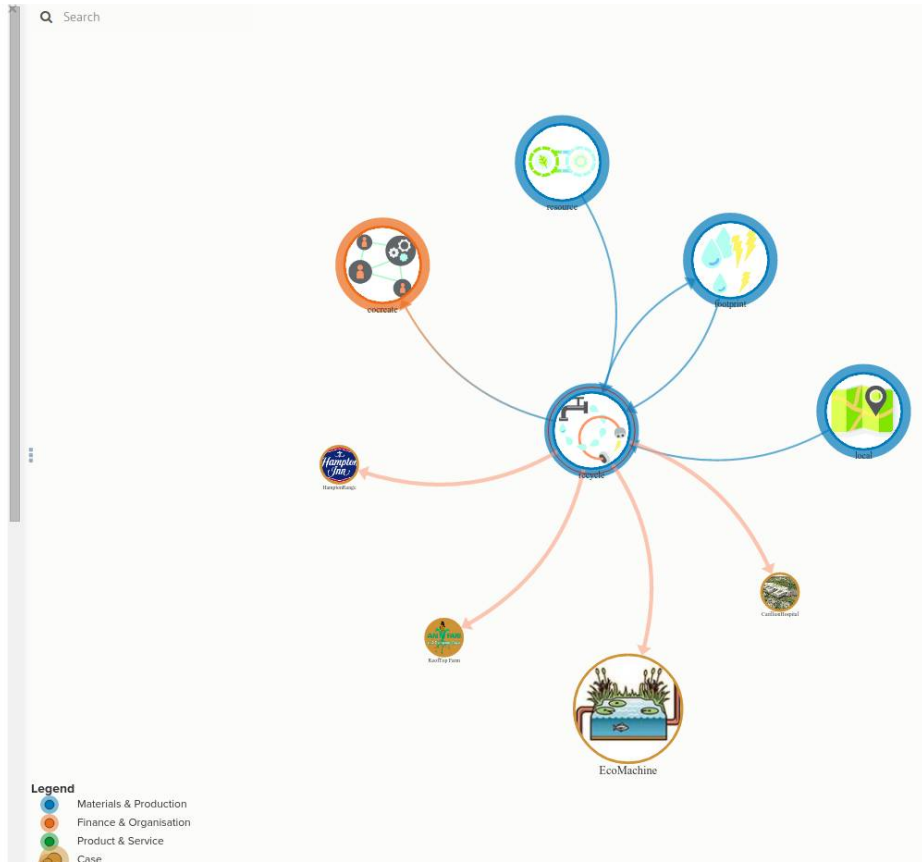
SUBTITLE re-cycle your own or others' excess energy & water

TITLE Re-Cycle Energy & Water

FR

DESCRIPTION-FR

Recyclez vos excédents d'énergie et d'eau ou ceux de vos partenaires



version "mobile":



prototype

PRINCIPLE



Innovate, Fail & Learn

experiment continuously & select the fittest ideas

How is our attitude towards making mistakes? Do we allow our mistakes to make better products and services? Do we give serendipity a change?

Could we test our new idea's or initiatives more easily in a friendly niche market? How can we receive better and faster feedback from our customers?

Get some inspiration!

See how *Accident* can lead to new benefits and [others] did it by following the 'examples' connections.

finance-organisation cost employee 0

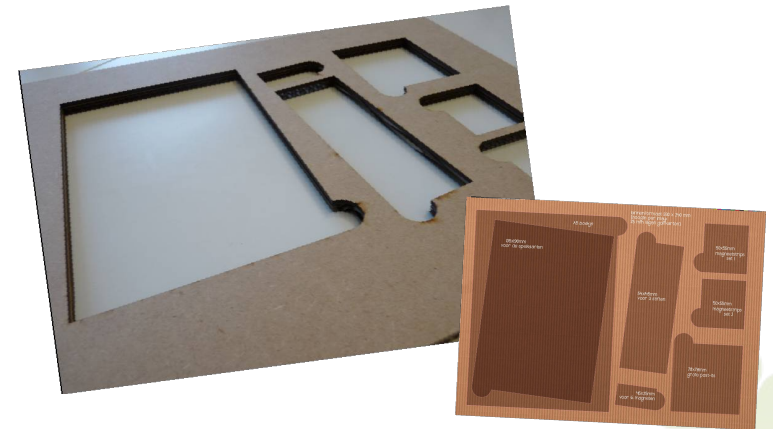
les auteurs du Resilience Design Toolkit



dans un futur proche



- Un serious Game, mise en situation en équipe pour découvrir les principes et utiliser les cartes (4 à 20 joueurs, 1 meneur/se de jeu)
- Une toolbox physique
- Un package "digital" intégré
- Un mécanisme de contributions / améliorations plus ouvert aux participants externes





- La Nature est une magnifique source d'inspiration pour le business
- Le Resilience Design Toolkit interprète les principes d'innovation durable de la Nature dans des termes business pour vous.
- Pour l'utiliser et participer
 - avec le repository compagnon en ligne:
http://short.resilientweb.eu/cards_intro
 - via la communauté (feedback & participation générale):
<http://short.resilientweb.eu/community>

- biomimicry à Bruxelles: www.greenloop.eu
- en France: www.biomimicry.eu
- aux USA: www.biomimicry.org
- Conference of J. Benyus: http://www.youtube.com/watch?v=k_GFq12w5WU&feature=relmfu
- US teaching materials: <http://www.sustainabilityleadersnetwork.org>
- Ask Nature database: www.asknature.org/
- Dancing with Systems : <http://www.sustainer.org/pubs/Dancing.html>

en librairie

"A must read for everyone involved in the business of the future" - *Wick Boneman, Chairman, Ecorse*

The NATURE of BUSINESS

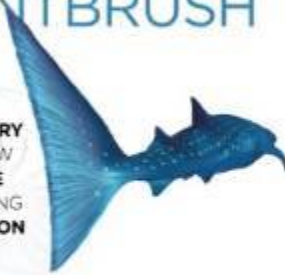
Redesigning for resilience



Giles Hutchins

The SHARK'S PAINTBRUSH

BIOMIMICRY AND HOW NATURE IS INSPIRING INNOVATION

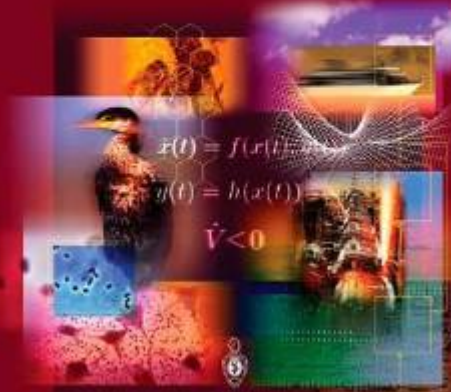


JAY HARMAN

"Imagine hollow bones, Hubble-style fins, and Croesus Darwin rolled into one person, and you will have some sense of what it is like to roam and see the world through Jay Harman's biomimetic eyes. The Shark's Paintbrush is a memoir of lessons from the living world in a time of crisis and doubt. It is all its intensity offers united guidance for the transformation of civilization."
- Paul Hawken, author of *Deep Green*

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Biomimicry for Optimization, Control, and Automation



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"Provocative, and could well provide one viable answer to the wake-up call that Rachel Carson sounded... in *Silent Spring*."
- *SAN FRANCISCO CHRONICLE*

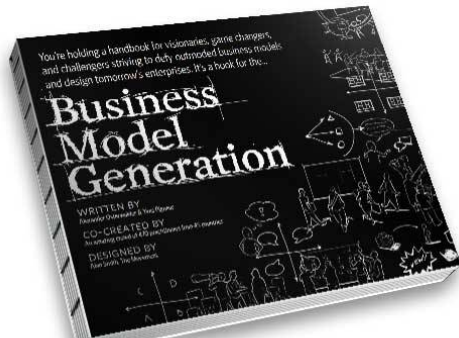
BIOMIMICRY



Innovation Inspired by Nature

JANINE M. BENYUS

Now a two-hour public television special on *The Nature of Things* with David Suzuki



You're holding a handbook for visionaries, game changers, and challengers striving to defy outmoded business models and design tomorrow's enterprises. It's a hook for the...

Business Model Generation

WRITTEN BY
Alexander Osterwalder & Yves Pigneur
CO-CREATED BY
Ansoff Group & Strategy First
DESIGNED BY
Peter Pels & Benjamin

How to create products and services customers want. Get started with...

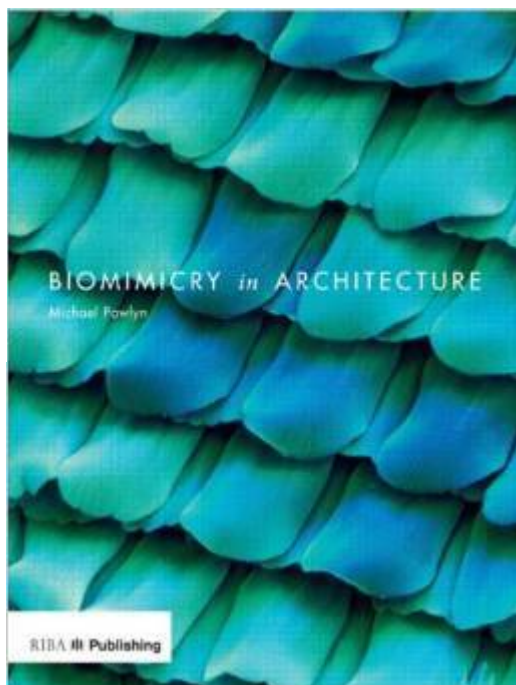
Value Proposition Design

strategizer.com/val
Written by
Alex Osterwalder
Yves Pigneur
Greg Bernardini
Agnie Smit
Designed by
Irene Papadimitriou

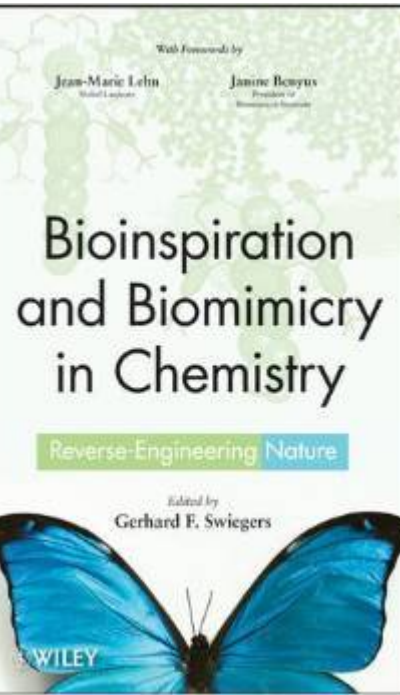


BIOMIMICRY in ARCHITECTURE

Michael Pawlyn



RIBA Publishing



With Forewords by
Jean-Marie Lehn
Richard Lindqvist
Janine Benyus
President of
Biomimicry Institute

Bioinspiration and Biomimicry in Chemistry

Reverse-Engineering Nature

Edited by
Gerhard E. Swiegler

WILEY

"Nature is our ultimate teacher and a powerful source of wisdom and resilience. This book can help everyone bring that beauty to our financial lives."
- ANDREW ZOLL, author, *Business: Why Things Don't Work*

The NATURE of Investing

Resilient Investment Strategies Through Biomimicry

KATHERINE COLLINS



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INTERREG IVB

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Merci pour votre participation!

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