Natural Capitalism

The journey to Natural Capitalism involves four major shifts in business practices, all virtually interlinked.
Natural Capitalism

Principle 1: Radically *increase the productivity of natural resources through a whole system design mentality that fundamentally changes facilities, production processes and products.*

Principle 2: Biomimicry - Shift production to *biologically-inspired patterns* that close materials loops, eliminate waste and toxicity, and minimize throughput.
Natural Capitalism

**Principle 3:** Move to a solution-based business model that delivers value as a continuous flow of services rather than the sale of goods – rewarding both the provider and the customer for doing more and better with less for longer.

**Principle 4:** Reinvest in natural capital, which is ultimately the basis for future prosperity, yet is in increasingly short supply – and whose copious production by nature is automatic if unimpeded.
Remarks

- Natural capitalism is not motivated by a current scarcity of natural resources
- Natural capitalism is a framework (shared mental model) for organizations (businesses, non-profits, governments) to prosper while improving environmental and social performance
- Natural capitalism encourages changes in the “business climate” of capitalism that support rather than depress “doing well by doing good”
Principle 1: Dramatically Increase the Productivity of Natural Resources

We get more work and more value out of natural resources (energy, minerals, water, forests), and profit by doing more with less. Stretch natural resources 5, 10 or even 100x further than they do today.

- Implementation of whole system design and thinking. Small changes can yield big savings
- Introduce alternative, environmentally friendly technologies
- By-product synergy
Industrial Symbiosis (Eco-park)
www.symbiosis.dk
http://www.bigpicture.tv/videos/watch/ec8ce6abb
FIGURE 6.12 The industrial ecosystem (eco-park) at Kalundborg, Denmark.
Green Development

Objective: to have buildings and communities that are:

- More profitable to build or retrofit
- Less expensive to run
- Healthier and more comfortable to occupy
- More productive to work in

http://www.bigpicture.tv/videos/watch/918317b57
Principle 2: Biomimicry Operating Vision

Shift production to biologically-inspired patterns that close materials loops, eliminate waste and toxicity, and minimize throughput.

Nature as model, measure and mentor
Living Machine
(Oberlin College, Ohio)

Nature’s way: “Living machine” recycles nonpotable water
Principle 3: Service Solutions and Service Business Model

A solutions-based business model that delivers value as a continuous flow of services rather than the sale of goods – rewarding both the provider and the customer for doing more and better with less for longer.
Product as Service

- **Agfa Gaevert** – leasing photocopiers (copier company owns/maintains copier)
- **Carrier Corporation (United Technologies)** - “comfort lease” and retains ownership of A/C unit
- **Interface, Inc.** – leasing the comfort, beauty, warmth of floor coverings
- **Schindler** – leasing vertical transportation services!
Product as Service

France – chauffagistes

- *Chauffagistes* contract with a company to keep their floor space within a certain temperature range.
- Selling “warmth”
- The less energy and materials used, the more efficient they are, the more $ they make.

- 10 million buildings in French cities heated this way.
- 1995: 160 firms employed 28,000 professionals in this business
Product as Service

The Right Incentives are Created!

- Minimization of materials/resources (continuous increases in resource productivity)
- Maximize product durability
- Enhanced ease of maintenance
- Could stabilize business cycle (constant $ flow)
- Protect manufacturer’s investment & bottom line
- Happy customer
Principle 4: Reinvest in Natural Capital

- Reinvest in restoring, sustaining, and expanding our own natural habitat and biological resource base
- Otherwise, shortages of ecosystem services are likely to become the limiting factor to prosperity in the future
- Nature does the production
- Working with nature is more productive than working against it
An organization using Natural Capitalism will:

- Incorporate Natural Capitalism principles into Core Strategy
- Realize that solutions lie in understanding the interconnectedness of problems and not in confronting them in isolation
- Seek a common framework of understanding about the functions of earth and the dynamics of society
- Comprehensively plan for a future with natural capital and human capital appropriately valued
The Natural Step Framework

- Founded in 1989 by Karl-Henrik Robert, an oncologist and cancer researcher
- Guide business and government onto a sustainable path through research and education
- Four systems conditions = a common ground of operation and decision
Some Scientific Constraints

- Matter and energy cannot be created or destroyed
- Matter and energy tend to disperse
- Material quality can be characterized by the concentration, purity and structure of matter
- The net increase in material quality on Earth is produced by sun-driven processes

(from the Natural Step)

http://www.whistleritsournature.ca/animation/basicscience.html
The Four Systems Conditions of The Natural Step Framework

In a sustainable society, nature’s function and diversity are not subject to systematically increasing...

1. Concentrations of substances extracted from the Earth’s crust;
2. Concentrations of substances produced by society;
3. Degradations by physical means;

and in that society
4. Human needs are met worldwide by using resources fairly and efficiently.

http://www.whistleritsournature.ca/animation/4systemconditions.html
http://www.bigpicture.tv/videos/watch/9188905e7
"The Natural Step"

Resources and earth's assimilative capacity (Supply)

"Hitting the Wall"
- Regulatory constraints
- Resource scarcity
- Damaged reputation
- Increased costs
- Higher taxes
- Higher costs
- Market changes
- More...

Impact = Population x Affluence x Technology, or
\[ I = P \times A \times T_1 \]

Society's margin for action

Today

http://www.whistleritsournature.ca/animation/funnel.html
Natural Step framework as a four-step process for “reactive” companies

- Awareness
- Baseline mapping
- Clear vision
- Down to action

http://www.whistleritsournature.ca(animation)/ABCD.html
http://naturalstep.ca/implementation.html
http://www.bigpicture.tv/videos/watch/0266e33d3
TNS Exercise

Apply The Natural Step (TNS) framework to a home, a business place, or an organization.

- How does this organization or operation meet System Conditions 1-4?
- Provide two suggestions for how it could meet the System Conditions (short term and long term).
- What are the obstacles in the way of meeting the System Conditions? (social, economic, psychological, historical, etc.)

http://www.whistleritsournature.ca/animation/wheel.html
The Making of the Evolutionary Corporation

- It integrates natural systems and natural laws into the frame of business reality (strategic business decisions and day-to-day operations) in a realistic and operational way.
- It recognizes that it is part of nature and consciously integrate its vision and operations with natural cycles and processes. It cares. It develops evolutionary consciousness.
- It develops a corporate strategy “beyond compliance era” founded on progress toward zero waste, whole system thinking, beyond internal operational sustainability, and beyond environmental issues and toward sustainable development. Sustainability is a core value.
- It builds cooperation:
  - [http://www.bigpicture.tv/videos/watch/38db3aed9](http://www.bigpicture.tv/videos/watch/38db3aed9)
  - [http://www.bigpicture.tv/videos/watch/3cec07e9b](http://www.bigpicture.tv/videos/watch/3cec07e9b)
Establishing a Greening Program
(from Bill Wallace)

- Create a small greening task force
- Select candidate organizations in which to pilot greening projects
- Identify candidate pilot projects
- Select pilot projects for implementation
- Develop a project scope of work
- Pilot project implementation
- Measure and assess results

Global Reporting Initiative: www.globalreporting.org
http://www.ortns.org/resources_grn.htm

- **BOORA Architects Inc.**

- **NIKE**
  [http://www.ortns.org/documents/Nike.PDF](http://www.ortns.org/documents/Nike.PDF)

- **IKEA**
  [http://www.ortns.org/documents/IKEA.PDF](http://www.ortns.org/documents/IKEA.PDF)

- **J.M. Bygg Construction**