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## **Nature-connected Thinking: A Fundamental Change for Businesses**

A question that frequently arises when I talk to others about Antioch's Green MBA program is, "How do you define sustainable business?" My responses are centered on the concept of an organization having a positive impact on all of its stakeholders, while also thriving economically. In many ways, a sustainable business operates in the way that nature does. It uses energy wisely, it draws on waste as a resource, it nourishes its employees and surrounding community, it embraces limits. And it is grounded with roots of diversity, flexibility, and cooperation.

This independent study has been an amazing opportunity to delve further into these ideas, to gain a stronger background and understanding of natural systems and how the business world can (carefully and intentionally) use its lessons to become sustainable.

One of the most profound steps that an organization can take in striving to become more sustainable is to learn from nature's designs and integrate the underlying principles into its business practices. This often requires a fundamental shift not only in the way business is done, but also in the mindset of all of those involved. In this paper, I am exploring the theory and practice of organizations incorporating ideas based on natural systems into their business models. To research this topic, I selected four texts that offer distinct but interconnected perspectives, and I will draw on ideas and examples from each throughout the paper.

In industrialized society, people have become devastatingly disconnected from the natural world. In our human quest to survive and thrive, we have often set out to conquer and control nature, rather than living harmoniously within it. On top of that, most of us spend about 95 percent of our lives indoors, according to Michael Cohen, author of a guide to authentically reconnecting with nature titled *The Web of Life Imperative*. Living

indoors serves to further detach us from and desensitize us to the natural world, which in turn distances us from the learning opportunities that it provides.

In writing about nature's valuable lessons in *Biomimicry*, which takes readers across the globe to researchers who are analyzing and applying nature's ancient solutions to the much more recent problem of human and ecosystem survival, Janine Benyus writes, "After 3.8 billion years of research and development, failures are fossils, and what surrounds us is the secret to survival." The living things that have survived and evolved throughout time are ripe with lessons in endurance and sustainability. From prairies to leaves, spider webs to redwood forests, nature's principles are found. Benyus lays out these ideas, showing how nature:

- Runs on sunlight
- Uses only the energy it needs
- Fits form to function
- Recycles everything
- Rewards cooperation
- Banks on diversity
- Demands local expertise
- Curbs excesses from within
- Taps the power of limits

For tens of thousands of years, human societies were nature-based—human beings lived by natural principles and relied on and nourished natural resources, without degrading them. There was a marked shift during the time of the Industrial Revolution. It has only been within the past two hundred years that human activity has become vastly disconnected from and harmful to nature.

We are now the only species that ignores ecological limits, exceeds the carrying capacity of the land, and consumes more energy than nature can provide. Waste, pollution, and poorly designed products have resulted from corporations pushing ahead with growth

without understanding the potential consequences for all stakeholders, including their surrounding communities and the environment. And only recently have large numbers of people begun to realize that there are limits to the world's resources, and that those resources are interconnected and vulnerable.

As Cohen describes, a renewed human connection with nature has the potential for igniting a strong movement toward positive global change.

We often think of industry and the environment as being at odds with one another, but as McDonough and Braungart posit in *Cradle to Cradle*, businesses can have a positive impact on the environment and their communities—not just do less harm—and they can make more money in the process. We live in a world of abundance. And we can design products and services that celebrate an abundance of human creativity, culture, and productivity—products and services that are so intelligent and safe, humans can leave “an ecological footprint to delight in, not lament.” The authors focus on waste, which does not exist in nature, describing how businesses can eliminate the entire concept of waste.

One example that Benyus sites in discussing the concept of waste as a resource is an ecopark in Denmark. Four companies are co-located, and all of them are linked, dependent on one another for resources or energy. Waste steam from one company powers the engines of two other businesses while also heating homes in the community; water heated for an industrial process is then used for a fish farm; and more. This food web concept is a key principle of *Cradle to Cradle*—waste as food—and can be extended to consumers, say both Benyus and McDonough and Braungart. Companies can take back their products for repair or recycling once they are outdated or no longer needed by the consumer. There, they can be turned into new products rather than going into the waste stream. This is already happening on a small scale and continues to grow. And it reflects a key component of natural systems: waste as a resource.

A concept presented in *Cradle to Cradle* that is striking is “eco-effectiveness.” This goes beyond “eco-efficiency,” or “being less bad,” to explore the possibilities around truly

being effective ecologically—or having a positive impact on the environment. This is exemplified in McDonough and Braungart’s idea of rejoicing in littering a coffee cup that you no longer need, due to the fact that it is made of materials that will nourish the soil it lands on. This gets at the heart of their idea—we should not need to worry about where to put our trash. All of our materials should be designed with their next useful step in mind.

This takes Benyus’ *Biomimicry* ideas to an important next level. While she lays out the ideas of copying nature’s processes, which in itself may imply “eco-effectiveness,” McDonough and Braungart overtly emphasize the importance of molding organizations that are truly helpful to the planet in their very design.

In *Bioteams*, which offers a model for high-performance teams based on nature’s most successful designs, Ken Thompson describes concepts of teams from the human immune system and bacteria to ants, geese, and forests. He writes, “Like the viceroy butterfly imitating the monarch, we humans are imitating the best and brightest organisms in our habitat. We are learning, for instance, how to grow food like a prairie, build ceramics like an abalone, create color like a peacock, self-medicate like a chimp, compute like a cell, and run a business like a hickory forest.” His book is very much aligned with the concepts in *Biomimicry*, using a natural systems lens on teams within organizations, with a particular focus on the major cultural shift toward virtual and remote teams. However, Thompson is focused on teams for the sake of teams; not necessarily for the sake of conserving natural resources and protecting the planet.

Thompson identifies key characteristics of “teams” in natural systems:

- Collective leadership—any group member can take the lead
- Instant messaging—instant whole-group broadcast communications
- Ecosystems—small is beautiful, but big is powerful
- Clustering—engaging the many through the few

These characteristics emerge in Thompson's "bioteaming" rules that can enable a business team to operate more like a natural system:

- Communicate information, not orders
- Mobilize everyone to look for and manage team threats and opportunities
- Achieve accountability through transparency, not permission
- Provide 24/7 instant "in-situ" message hotlines for all team members
- Treat external partners as fully trusted team members
- Nurture the team's internal and external networks and connections
- Develop consistent autonomous team member behaviors
- Team members must learn effective biological and interpersonal cooperation strategies
- Learn through experimentation, mutation, and team review
- Define the team in terms of "network transformations"—not outputs
- Develop team boundaries that are open to energy but closed to waste
- Scale naturally through nature's universal growth and decay cycles

These are highly important concepts in structuring teams—teams that can then go on to achieve business results such as those laid out in *Cradle to Cradle*.

Thompson cites the example of a manufacturing plant that produces jet engines for General Electric, which treats every team member as a leader and uses the concept of self-organization to operate. The plant has more than one hundred and seventy employees, but only one boss—meaning that on a day-to-day basis, people run themselves. They are given one basic directive: the day that the engine must be completed. They are free to meet that goal in the ways that they choose. The results have made them "the best in the GE Aircraft Engines division." Benyus would likely agree with Thompson that this example illustrates a key tenet of *Biomimicry*: self-organization. Operating more like a natural system can produce far greater outcomes than going against nature.

Another example from Thompson is “smart mobs,” which is essentially journalism taken on by the general public. It is a major social group phenomenon that is self-structuring and technology-mediated, and it relies on emergent behavior. This is a great demonstration of his theories about teams having a highly effective distributed early warning system and 24/7 “message hotlines.” The news, as reported by the public, now spreads rapidly, producing a more highly informed and engaged citizenry.

The practical techniques that Thompson describes are a great asset to *Bioteams*. They allow readers to test the theories by putting them into action, selecting a method based on the goals and needs of the team.

A further example he offers is a leadership conference organized by Dynamic Knowledge. The team designed the event using three key bioteaming principles—symbiosis, clustering, and “always-on.” To meet the symbiosis goals, all conference participants were considered part of the team, from organizers to attendees to speakers and sponsors. To maximize clustering, the natural relationships of the whole team were used to engage the community—delegates were selected based on enthusiasm, connections, and reliability. The company used “swarmteams,” a group messaging tool, to build up buzz using multiple channels and also to enable enhanced participation at the event itself. All of these efforts resulted in increased effective dialogue with less effort, as well as early feedback that the organizers could take action on.

While Thompson’s ideas do not necessarily get to the planet-saving level of those of McDonough and Braungart—or even Benyus—they illustrate important methods of cultivating sustainability within a business.

Each of these authors offers a unique but unified perspective on how nature can help us thrive. While Benyus and Thompson focus on imitation of nature’s processes, McDonough and Braungart do the same but add a more environmentally focused element. And, in *The Web of Life Imperative*, Cohen exposes the root causes as to why this behavior is not widespread, and how to make it more so.

As Cohen lays out, human beings have senses that are the result of nearly 15 billion years of cosmic evolution—and 3.8 billion years of life on this planet. They enable us to participate in the wisdom and wholeness of nature. However, we as a culture do not place high value in direct experience with nature, which has severed our connection to our direct sensory experiences. The loss is evident in almost all of today's industrial processes. In the natural world there is no waste—everything is used and recycled. In the industrial world, we have produced a “plastic continent” swirling in the Pacific Ocean and have buried dangerous waste in our ground and water. With its billions of years of proven research and development, the earth's natural system seems clearly more intelligent than the industrial system. However, this is exactly where the severance occurs. Many continue to argue that industrial thinking is more intelligent than the ecologically sound principles that surround us. As a whole, we have not come around to acknowledging the importance and intelligence of nature. Many conflicts that are described as “environmental issues” are those between old, outdated, ways of thinking and new ways of systems thinking—between nature-disconnected and nature-connected thinking.

Recently, President-elect Barack Obama said, “Focusing your life solely on making a buck shows a certain poverty of ambition. It asks too little of yourself. Because it's only when you hitch your wagon to something larger than yourself that you realize your true potential.” Compare Obama's statement to Cohen's: “The removal of our thinking and feeling from nature's self-correcting, whole ways of community self-government and self-organization reduces our sanity, our humor, our fun and fitness. Our loss of contact with great spirit creates the quandary of our predicaments and our inability to fulfill our fondest dreams.”

It is this reconnection of our thinking and feeling with nature that is so vitally needed. This is the sensitivity to the greater whole, the web of life. By embracing our roots in nature and our connections to it, we embrace an intelligence much greater than ourselves

alone. By embracing this, we can live in nature's way and use nature's wisdom not only for bettering our own lives, but all life.

As C. G. Jung said, "It is high time we realized that it is pointless to praise the light and preach it if nobody can see it. It is much more needful to teach people the art of seeing."

This quote gets at the core of Cohen's mission in writing *The Web of Life Imperative*. In order for businesses to operate more intelligently by mimicking natural systems, the people who are part of those organizations need to learn to see nature as a teacher—to see that all around them lie solutions to their most challenging issues. They need to experience the direct connections with nature that their ancestors have experienced for billions of years before them.

Benyus echoes this sentiment in *Biomimicry*. She acknowledges that the key will be a change in people's hearts, a humbling that allows us to be aware of the lessons that nature can offer. Whereas Cohen's focus is on "the art of seeing," Benyus concentrates on the analysis of natural systems and modern applications using new technology. Her book centers on several key areas: farming, harnessing energy, developing materials, healing, storing information, and conducting business. She shows the ways in which new technology can teach us how to live in harmony with nature, rather than how to dominate it. While Benyus is a scientist and the book contains some technical information, it is written for the layperson and is rich in practical insights. She walks a fine line in proposing that technology is what will help solve the ecological damage that has been caused by...well, technology. The importance of the book lies in its illustration of our need to transform beyond the ideas of the Industrial Revolution into an ecologically appreciative mindset.

In all, these readings have highlighted the need for a systems lens in the business world. Without the ability to see an organization as a complex system nested within other complex systems, the chances of achieving sustainability are low. And this starts at the individual level, with the people involved reconnecting with their place in nature. Only

then can the lessons of nature become apparent. Moving beyond this, the initial step in creating a business that can be a boon for the environment is the realization that such a business can exist—one that honors nature's principles and continues to find ways to contribute positively not only to its bottom line, but also to its surrounding environment and the planet as a whole.

## References

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